ARCHITECTURAL RECORD

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ARCHITECTURAL

RECORD

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THE RECORD REPORTS

Ralph Thomas Walker of New York Wins A.I.A. Presidential Race as Institute Convenes at Houston; Twenty-eight New Fellows Announced

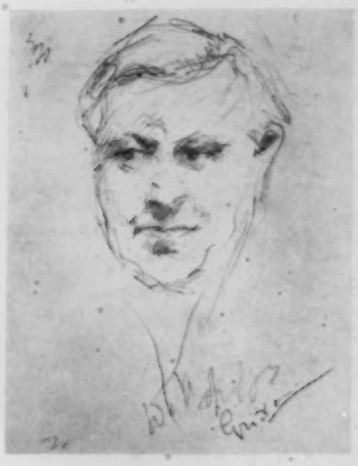
For the first time in many a year delegates to an American Institute of Architects convention were confronted with real choices to be made for officers when the Institute convened in Houston on March 15. Politics mixed into meetings in hotel lobbies and smoke-filled rooms. Candidates were interviewed, supporters argued and persuaded, and a record vote was cast with only one qualified voter failing to cast his ballot. The self-styled "young progressives" had accepted frequent invitations to come into the A.I.A. and speak up, which they did by offering an "opposition slate" headed by William Wilson Wurster, Dean of Architecture at Massachusetts Institute of Technology.

When the votes were tallied, the following results were reported by the tellers: President and Director, Ralph Thomas Walker, New York; First Vice President and Director, Glenn L. Stanton, Portland, Ore.; Second Vice President, Kenneth E. Wischmeyer, St. Louis, Mo.; Secretary and Director, Clair W. Ditchy, Detroit; Treasurer, Charles F. Cellarius, Cincinnati; Director, New England District, Harold B. Willis, Boston; Director, New York District, Arthur C. Holden, New York; Director, North Central States District, Wilbur H. Tusler, Minneapolis.

Chief among the honors bestowed at the convention was the awarding of the Institute's Gold Medal to Frank Lloyd Wright. The presentation was made by Douglas W. Orr, retiring president, at the annual dinner on the final evening. Said Mr. Orr: "Prometheus brought fire from Olympus and endured the wrath of Zeus for his daring; but his torch lit other fires and men lived more fully by their warmth. To see the beacon fires he has kindled is the greatest reward for one who has stolen fire from the gods. . . . Frank Lloyd Wright has kindled men's hearts. An eager generation of architects stands today as his living monument."

To Fred Langhorst of San Francisco went the First Honor Award for Residential Architecture, for the residence of Dr. and Mrs. Alex J. Ker (ARCHITECTURAL RECORD, April, 1948, pp. 104–108). Marsh, Smith and Powell of Los Angeles received the First Honor Award for Schools for the Corona Del Mar School, and Louis Conrad Rosenberg, of Fairfield, Conn., was awarded the Fine Arts Medal.

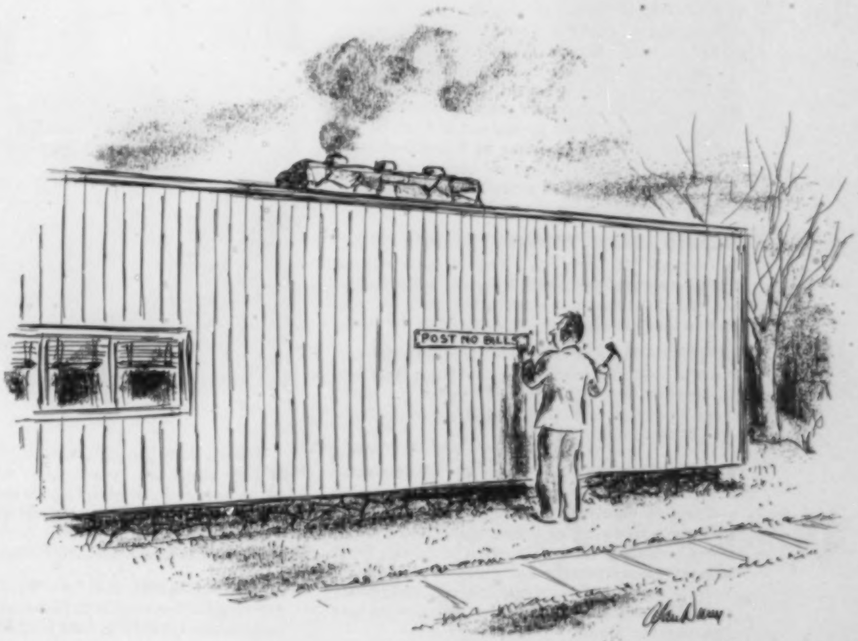
Wallace K. Harrison, Director of Planning for the United Nations Headquarters, was among the 28 new Fellows of the Institute announced at the dinner. The others are: Matthew W. Del Gaudio, Daniel Paul Higgins, John C. B. Moore, Louis Skidmore and Harold R. Sleeper of New York; Birdsall P. Briscoe, Alfred C. Finn, Kenneth Franzheim, Milton Bowles McGinty and William W. Watkin, of Houston; George H. Bond, Harold Bush-Brown and Henry J. Toombs, Atlanta; Jerrold Loebl and Nathaniel A. Owings, Chicago; Arthur Feitel, New Orleans; Harry Hake, Cincinnati; Earl T. Heitschmidt, Los Angeles; Walter W. Hook, Charlotte, N. C.; Burnham Hoyt, Denver; James W. Kideney of Buffalo; Angus V. McIver, Great Falls, Mont.; Harry L. Mead, Grand Rapids; Frederic L. Morgan, Louisville; John L. Skinner, Miami; Glenn L. Stanton, Portland, Ore.; Joseph L. Weinberg, Cleveland.



President Walker of the A.I.A.

In Ralph Thomas Walker the American Institute of Architects has a president worthy of its finest traditions. A native of Waterbury, Conn., and a graduate of the Massachusetts Institute of Technology, Mr. Walker is one of the best known and most honored members of the Institute. Gold Medalist of the Architectural League of New York in 1927, he is a past president of the New York Chapter, A.I.A., and has served as chairman of the Committee on International Congress of Architects, A.I.A., and delegate to the first Congress of International Union of Architects. He is a Fellow of the Institute, and partner in the New York architectural firm of Voorhees, Walker, Foley & Smith.

(*News continued on page 10*)



— Drawn for the RECORD by Alan Dunn

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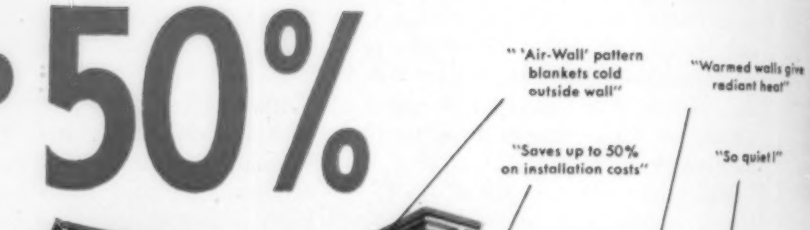
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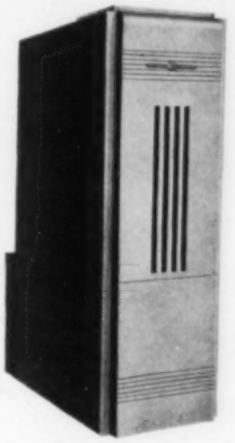

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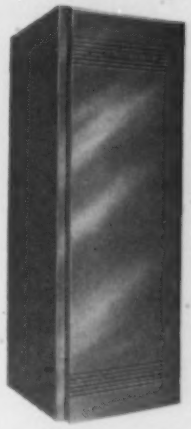

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THE RECORD REPORTS

(*Continued from page 7*)

Housing Picture Brighter

Despite the virtuous continuation of Washington emphasis on the housing shortage, the overall housing picture is brighter than it has been for a long, long time. At least that seems to be the consensus of groups everywhere but on Capitol Hill.

The semiannual survey of the National Association of Real Estate Boards, for example, shows fewer cities reporting a shortage of apartments than at any time since November, 1944, and a shortage of single family dwellings less prevalent than at any time since December, 1940. Only 56 per cent of the 505 cities covered in the N.A.R.E.B. survey reported a continuing shortage of used single family homes, and only 52 per cent reported a lack of new houses in that category.

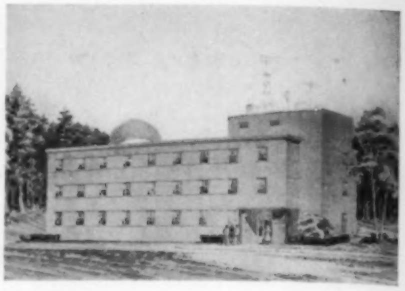
Those figures are more encouraging than they appear at first glance: at the close of 1947, says N.A.R.E.B., single family houses (old and new together) were short in 97 per cent of the surveyed cities, and six months ago in 75 per cent. Likewise, undersupply of apartments now is felt in 78 per cent of the reporting cities as against 98 per cent a year ago and 87 per cent six months ago. In other words, the N.A.R.E.B. survey shows a most encouraging and consistent downward trend in the housing shortage.

Home Builders Optimistic

With a million or so new units added to the nation's housing supply in 1948, smashing all previous records for home building in this country, a general optimism prevailed at the convention of the National Association of Home Builders in Chicago late in February. It was an optimism born of a job well started, however, not of a job well done: there was much less shoulder patting than earnest study of the problems still to be solved.

Convention keynoter was Edward R. Carr of Washington, D. C., immediate past president of the Association, who gave the home builders two challenging goals for the coming year: technical advance in construction, and education of the public in the truths of housing. Urging more attention to house design and to land planning, Mr. Carr called for "an oiling and adjustment of mortgage finance machinery to make money available to do the job," and warned that the Economy House "must not become a shabby strip-tease model . . . but must be kept to sound basic construction standards." Home builders must give the public the kind of housing it wants,

(*Continued on page 12*)



Geophysical Institute for the University of Alaska, Fairbanks, designed by Federal Works Agency architects for PBA erection

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NEWS FROM CANADA

By John Caulfield Smith

C.C.A. Calls for Subsidies

The Canadian Construction Association passed a number of resolutions at its recent annual meeting in Toronto (Architectural Record, March, 1949). It called for modernization of ancient, unrelated building codes, importation of skilled bricklayers and plasterers from abroad, and reconsideration by labor of any plans it might have for a fourth-round wage drive.

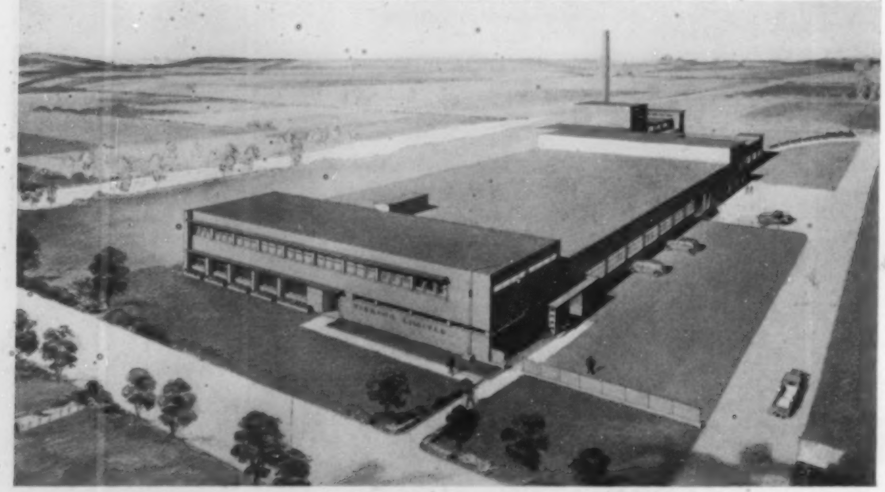
The Association also reaffirmed its belief in free enterprise and forcefully advocated adoption of a national public housing program.

Does this appear inconsistent? Rather similar to the position taken by the politician who promises to spend more and tax less? The C.C.A. executive doesn't think so. He believes that relief of social problems, such as those posed by poor housing, is essential if capitalism is to survive. Of course, other authorities just as interested in preserving the existing economic order argue that subsidies perpetuate existing building methods, postponing the day when every wage-earner can afford a new house.

In any case, the Association sees its program as a "modest" one "in keeping with the needs and abilities of the Canadian people and the availability of labor and materials." It proposes a 10-year program involving erection of 120,000 dwelling units and says its member contractors are ready to proceed "as soon as agreement is reached among governments on the solution of land and financial problems."

Agitation for housing subsidies by many important organizations seems to be having effect at Ottawa. Prime Minister St. Laurent, who may face a general election this year, has come a long way in his thinking. Over a year ago he de-

(*News continued on page 154*)



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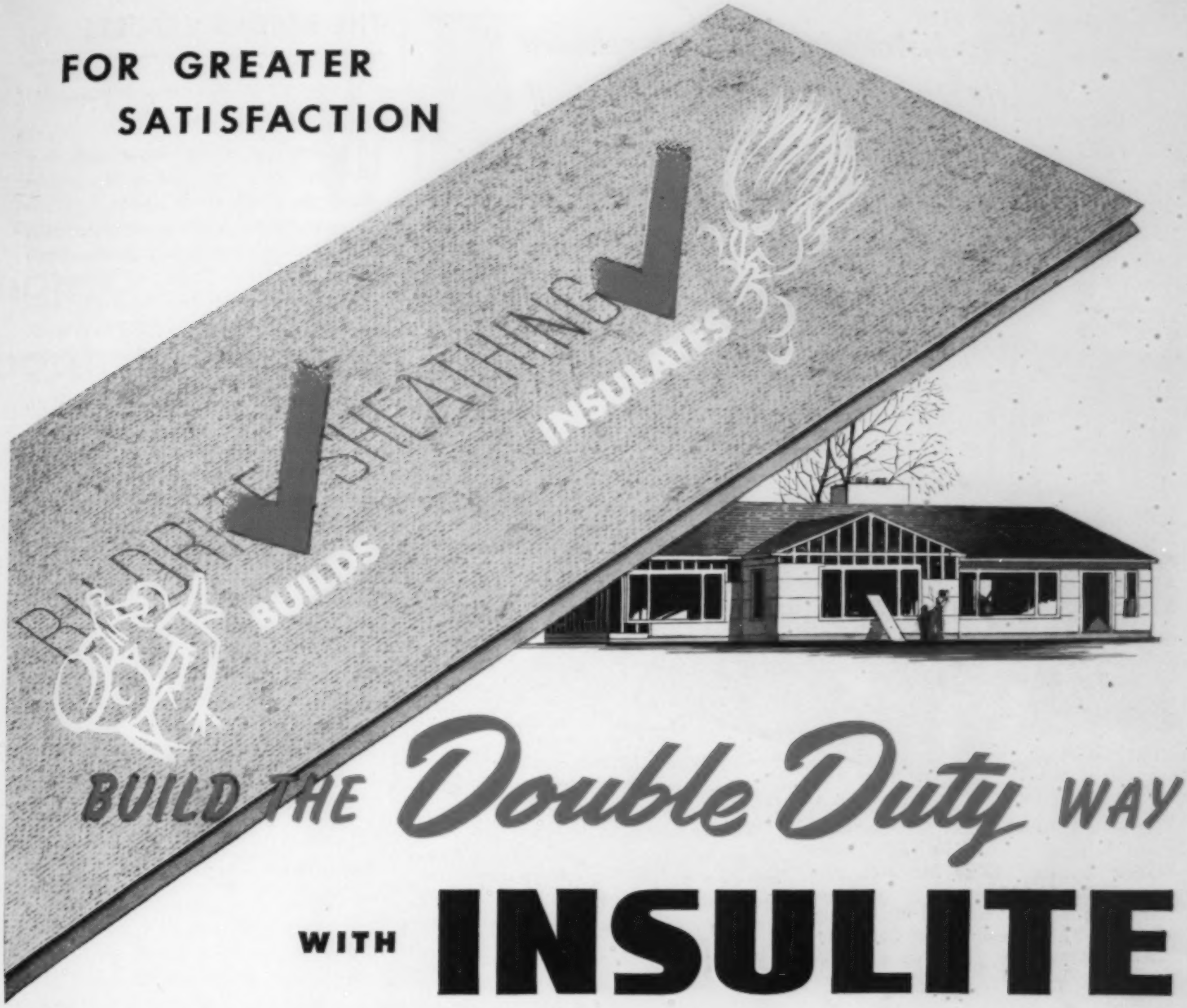

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Refer to Sweet's File,
Architectural Section 10a/9

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Webster
BASEBOARD HEATING

THE RECORD REPORTS

(*Continued from page 10*)

he added, but at the same time they must see to it that the public understands the truth about housing. "There has never been so much misinformation circulated about any question than there has recently about housing," he said.

"Housing has become the great American topic of conversation," Franklin D. Richards, FHA Commissioner, told the meeting in stressing the need for continued high production of housing. With the median income of the American family just under $3000, he warned, serious consideration must be given to the vital factor of "capacity to pay." He praised the Economy House program, and explained the main points of the FHA plans for cooperative housing and yield insurance, but barely touched on the availability of mortgage money.

New N.A.H.B. officers elected during the meeting are: Rodney M. Lockwood of Detroit, president; Thomas P. Coogan of Miami, Fla., first vice president; William P. Atkinson of Oklahoma City, second vice president; Nicholas F. Molnar of Cleveland, secretary; and Nathan Manilow of Chicago, treasurer.

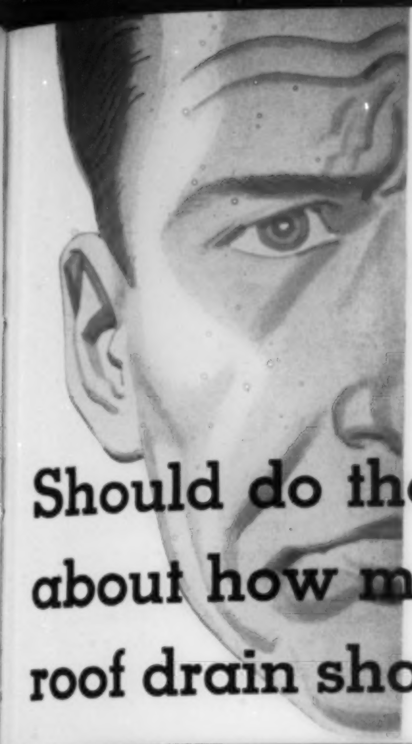
Contractors Cheerful, Too

The construction industry should be able to execute a larger volume of work faster and more efficiently during 1949 than in any year since the end of the war, Managing Director H. E. Foreman reported to the 30th Anniversary Convention of the Associated General Contractors of America in New York last month. With the expectation of more adequate materials and equipment, more skilled workmen, more competition, and no major upsets to the national economy, Mr. Foreman said, there is every reason to anticipate this.

A.I.A. President Douglas William Orr urged that construction and architecture, and the numerous industries associated with them, collaborate in a new type of research on the advances of science. There is insufficient research under way, said Mr. Orr, to discover means and methods of coordinating the various parts of the industry. He recommended that the A.I.A. and the A.G.C. join forces on such a program.

New A.G.C. officers are: Adolph Teichert, Jr., of Sacramento, Calif., president; Walter L. Couse, Detroit, vice president.

(*News continued on page 14*)



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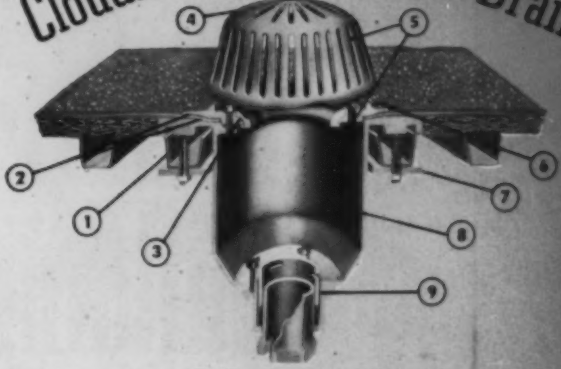
ZURN

Cloudburst Type Roof Drain



Z-12-120C

Patented & Patent Pending

1. Prefabricated steel deck
2. Dome fits snugly flush with roof level; no pockets to catch strainer clogging debris; broad, plain clamping surfaces require minimum deformation of flashing
3. Bayonet type locking device rigidly secures dome to body; easy to remove
4. Extra large mushroom type dome strainer open area ratio up to 35:1
5. Secondary drainage; primary drainage
6. Integral clamping collar and gravel guard
7. Drain anchoring plate
8. Extra large sump provides deep hydraulic head on downspout and eliminates entrained air
9. Cast bronze expansion sleeve

Zurn Cloudburst Type Roof Drains are suitable for installation on wood, concrete, prefabricated steel deck or other roof construction. The rapid flare of the dome facilitates maximum flow of water into the drain. Large, deep sump area in drain body maintains hydraulic head on downspout to compensate for pipe entrance friction factor; allows entrained air to escape. Consequently, the cloudburst type drain carries off sudden surges of water quickly and efficiently. This type drain marks a notable advancement in roof drainage.

The complete line of Zurn Building, Plumbing, Drainage Products includes: **Floor and Roof Drains for every type of installation • Grease Interceptors • Oil Interceptors • Plaster and Solids Interceptors • Swimming Pool Equipment • Backwater Valves • Wall Fixture Carriers • Wall Closet Fittings • Plumbing-Drainage Fittings • Cleanouts • Bath Traps • Hydrants • Street Washers**

Zurn Wall Closet Fittings for Installation of Batteries of Wall-Type Closets

Zurn Draindicator saves time and work for engineers, architects and plumbing contractors, who are eligible for a complimentary copy.

J. A. ZURN MFG. CO., Pittsburgh Ave., Erie, Pa., U. S. A.
Please send information regarding Cloudburst Type Roof Drain and the following literature:

☐ Catalog 47-1 of Zurn Building, Plumbing, Drainage Products
☐ Zurn Draindicator
☐ Zurn Booklet on Wall Closet Fittings
☐ Zurn Handbook on the Proper Sizing and Selection of Grease Interceptor

Name .... *Position* ....
Company ....
Street ....
City .... *State* ....

ZURN **Provides Better Ways, to Drain Waste and Rain Water, ...through Research and Engineering**

Z-542 Zurn Continuous Flow Solids Retaining Floor Drain

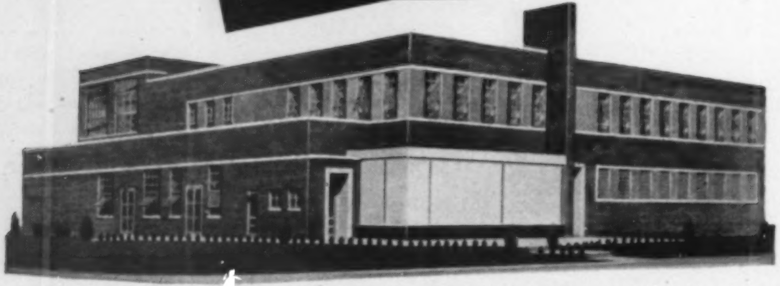
Z-1171 Zurn Deluxe Cast Iron Greaseptor

Z-1218 Zurn Carrier for Service Sinks

Z-506 and Z-507 Zurn Easy Level Floor Drain

Z-1090 Zurn Backwater Sewer Valve with Cleansweep Water Ways in MODERN buildings... it's

ALBERENE



Modern dairy plant in Richmond, Virginia.
Architects: Ballou & Justice

In this attractive, modern plant, it's *mullions* by Alberene — because Alberene mullions match so well the shadow effect of the windows . . . blend so perfectly with the exterior of the building as a whole.

And . . . it's Alberene Stone, too, for modern-looking, durable, maintenance-free spandrels . . . sills . . . stools . . . trim.

Here's why —

- **Esthetically,** Alberene soapstone is *right* for giving a building — institutional *or* industrial — the modern touch. *Because* . . . its natural greenish-blue color harmonizes with any decorative pattern. *And* its moisture-proof surface does not chip, scale, or split — it *always* looks good!

- **Financially,** Alberene soapstone is *right* for pleasing even your most budget-minded client. *Because* . . . its reasonable price . . . its ability to be cut into thin sections . . . *and* its outstanding durability makes it *triply economical.*

Why not write or phone us today for samples and further information?

**ALBERENE STONE CORPORATION
of VIRGINIA**

419 — 4th Ave., New York 16, N. Y.

THE RECORD REPORTS

(*Continued from page 12*)

BRAB Gets Going

As Congress works along in its effort to find solutions to housing problems, the more specific field of research in building construction has been attacked by the newly-activated Building Research Advisory Board. Begun without much fanfare, this new move in the direction of perfecting building techniques will turn out to be of importance not only to the industry but to the entire economy through the direct benefits it should bring to construction. What happens to the processes of material manufacture, assembly and erection in the next five, 15 or 25 years can be vitally affected by the operations of this board.

As reported in this column last month, the first objective of BRAB is to analyze the needs of the construction industry and state them clearly for everyone to observe. The Board hopes secondly to extend its investigations so broadly that it can learn about nearly everything that is being done in building research, even penetrating the laboratories of schools and colleges and of private business, and the activities of federal agencies. While carrying on this work, and in connection with it, the board will strive to (1) eliminate unimportant work in research which needlessly consumes time, (2) eliminate duplications for obvious reasons, and (3) encourage research projects in new areas that so far have gone unexplored.

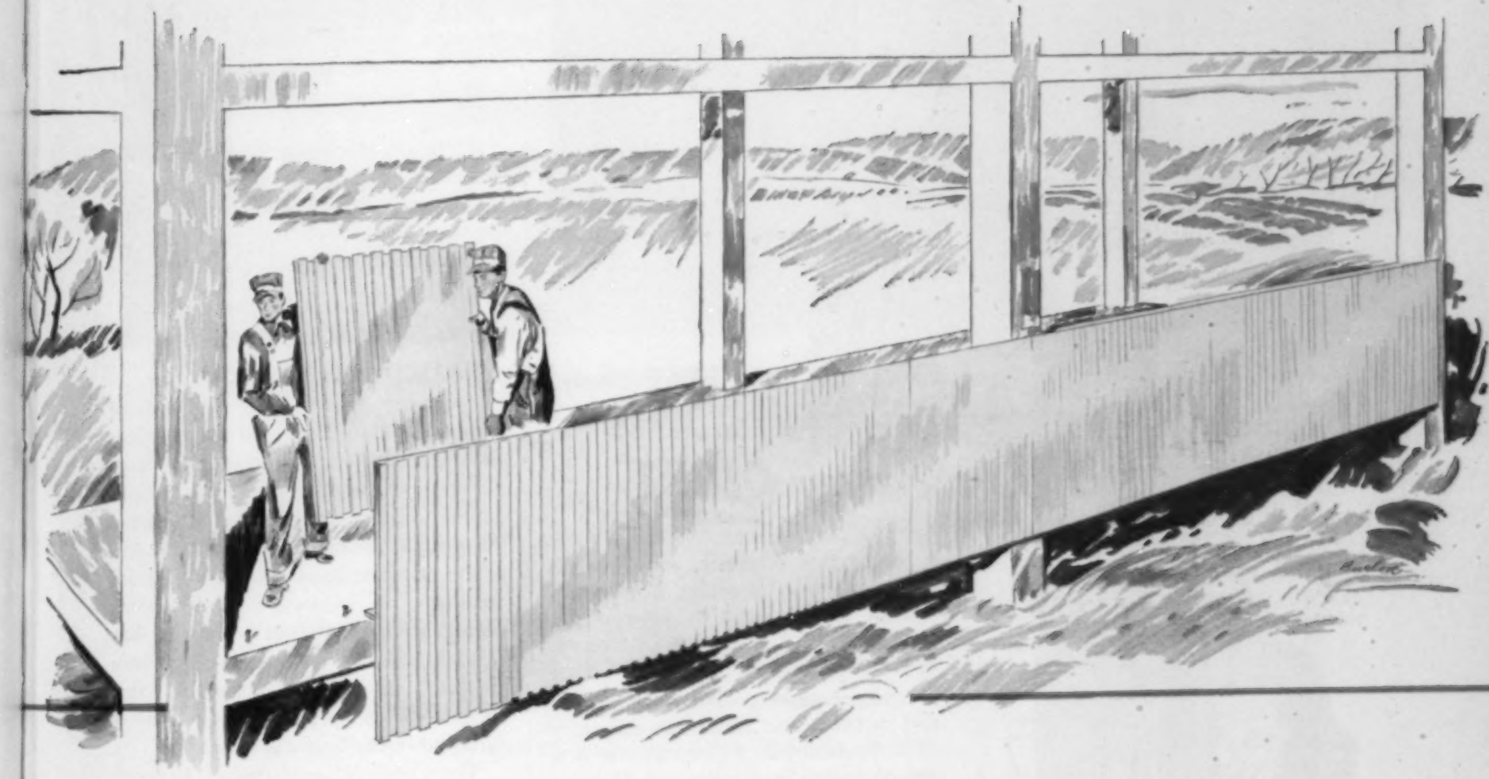
The third major job that BRAB has established for itself, after the preliminary steps have been taken, is the highly important task of disseminating the information secured. The newly-gained research knowledge — facts concerning better ways to assemble better materials and to erect them — will be accessible for any person or firm BRAB thinks can use it. There will be no pressure from the group for adoption of these techniques. The facts simply will be outlined and offered to any who wish to use them.

Enthusiastic Dr. C. F. Rassweiler, vice president in charge of research and development for the Johns-Manville Corp., and a spokesman for the new enterprise, sketched BRAB's objectives briefly in the RECORD before last month's organizational meeting took place (February, 1949, p. 130). Follow-

(*Continued on page 16*)

fact supporting wall

under construction



This wall never will enclose anything. It never will support anything . . . except facts.

It was designed with the assistance of one of America's leading architects; erected under the supervision of one of the world's largest construction firms. They will collaborate with Alcoa in testing its performance.

We are working here to develop new methods of aluminum curtain wall construction with higher factors of strength, durability, insulation and fire resistance; and low erection and maintenance costs.

This is one of many Alcoa research projects now under way in the building field. The answers as we find them will be available to all architects and engineers.

During more than 60 years of aluminum research and development we have found the solutions to many problems of designing and building with aluminum. This information and our engineering assistance are available to you. Write or call your local Alcoa sales office or ALUMINUM COMPANY OF AMERICA, 1867 Gulf Building, Pittsburgh 19, Pennsylvania.

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This NEW BROCHURE . . .

tells about the "quiet" ceiling with 100,000 "Noise Traps"

Johns-Manville Fibretone
The ceiling with one hundred thousand noise traps

Send for your FREE copy. Learn how Fibretone* gives you QUIET

• In this new brochure, you can read in *non-technical* language how noise-control brings *quiet* to your office, restaurant, bank, store, school, factory, or recreation center.

In simple, easy-to-understand words and pictures, the book tells the story of Johns-Manville Fibretone, the new low-cost acoustical ceiling unit. Graphic diagrams explain the ingenious Fibretone "noise traps"—small holes drilled in the sound-absorbing panels. Photographs of actual installations emphasize Fibretone's attractive appearance.

Once you experience the benefits of Fibretone, you'll never be satisfied with an ordinary, noise-reflecting ceiling.

Send for this new Fibretone brochure . . . and see for yourself how it shows the way to a more comfortable environment, less nerve strain, increased production! Write Johns-Manville, Box 290, Dept. AR-4, New York 16, New York.

*Reg. U. S. Pat. Off.

Put a ceiling on noise with

JM Johns-Manville Products Johns-Manville FIBRETONE

(*Continued from page 14*)

ing the meeting, he outlined them in greater detail, though still in broad terms, as follows:

1. To list, review and correlate the results of completed research.
2. To list, review and correlate current research activities.
3. To disseminate information so obtained.
4. To sponsor forum discussion of research aims and results.
5. To coordinate research effort and actively sponsor elimination of needless research.
6. To foster research in relatively undeveloped areas.
7. And generally to further the application of scientific methods for the improvement of building construction practices.

What, precisely, is BRAB?

BRAB is a committee of 27 men, its membership drawn from the fields of science, architecture and engineering, building construction, research, labor, government, and material production. It is to function as a part of the National Research Council. This Council, in turn, is the research agency for the National Academy of Sciences, an independent organization. (Sponsors point out that BRAB will be completely free from political influences, considering this factor one of its primary assets as it undertakes the huge task ahead.)

The Construction Industry Advisory Council of the Chamber of Commerce of the United States has been instrumental in getting the Board established. CIAC has done a great deal more than just pay lip service to the endeavor. In fact, it has handled money-raising details to date. BRAB expects to operate with an annual stake of $100,000 over a five-year period. This arrangement does not limit its life to five years, however. The plan is for this new approach to continue indefinitely; much in the manner that the National Highway Research Council has served road building for more than two decades.

Now that the Board has held its initial meeting, it will name a full time secretary and move ahead with funds made available through contributions. Every segment of the building construction industry is being given an opportunity to participate. Grants and commissions

(*Continued on page 18*)

LIGHT WEIGHT • SOUND PROOF • INSULATING •

uniform

pumice

graded

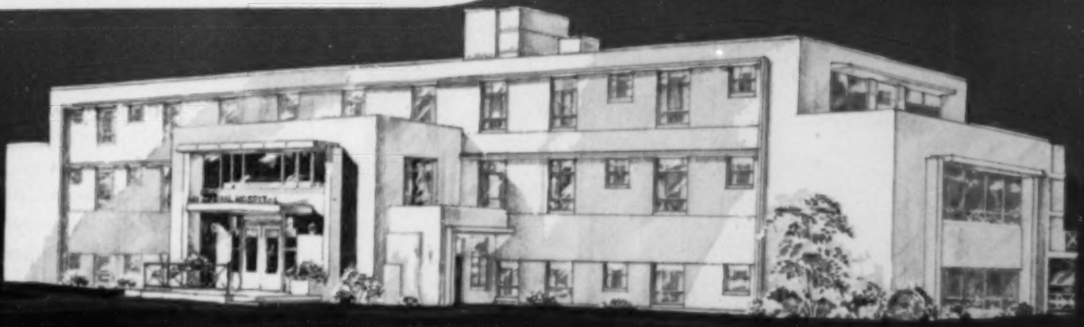
FIRE PROOF • NAILABLE • SAWABLE

Jackson County Memorial Hospital

Altus, Oklahoma

Hudgins, Thompson, Ball and Associates
Oklahoma City, Oklahoma
Architect-Engineers

Lippert Bros. Construction Co.
Oklahoma City, Oklahoma
Contractor



ANOTHER EXAMPLE of Pumice Concrete Construction

COMPRESSIVE STRENGTH 2500 PSI
WEIGHT 75 LBS. PER CUBIC FOOT

Lightweight concrete, properly designed with uniform graded pumice aggregate offers many structural advantages and actual construction savings that are worth careful consideration by architects and engineers. At Altus, Oklahoma, for example, the dead load of the structural frame for this monolithic hospital building was reduced approximately 50% by the use of pumice concrete. A saving of 45% in reinforcing steel with the same live load capacity was accomplished. In addition to these advantages, usable space efficiency was improved materially due to a smaller supporting frame made possible by the lighter load.

Plus Value!

THERMAL INSULATION

Taking full advantage of the insulating value in pumice, the designers of the Altus hospital used 8" roof and floor slabs with an insulating value approximately equal to a normal 6" slab of ordinary heavy concrete PLUS 3" of insulating material.

Plus Value!

ACOUSTIC INSULATION

Where acoustic properties are desirable, the walls of this material are finished with a rough texture, the resulting high percentage of sound absorption achieves a quietness that adds materially to the comfort of occupancy. This characteristic is especially noticeable in masonry walls and partitions.

Plus Value!

LOW SOUND TRANSMISSION

Average transmission losses of 53 decibels have been ascertained for this material. This low transmission factor greatly reduces the chance of noise in one room disturbing the quiet in other rooms.

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UNIFORM GRADED PUMICE is a name applied only to pumice aggregate produced by members of the Pumice Producers Association. Write your nearest producer for technical data. Additional information is in your 1949 Sweet's Architectural (4E/5) and Engineering (4A/8) files.

THE EMBLEM of the Pumice Producers Association stands for Quality Pumice suitable for aggregate in the production of lightweight concrete for structural purposes. It is for your protection; only members of the Association and their franchised manufacturers are permitted to display it.

...the touch THAT TELLS THE STORY!

One touch of your finger will tell you why *wood* windows maintain their widespread popularity. For wood is a *natural* insulating material. It retards transmission of heat or cold, minimizing dimensional change due to temperature variation. Ponderosa Pine's low density, smooth texture, and uniform grain provide a natural bond for all finishes. Moderate in cost, and available in modular standard sizes in a wide variety of styles, Ponderosa Pine windows are correctly proportioned and precision made for quick installation. These windows are available toxic preservative treated in accordance with tested industry standards. Preservative treatment of your Ponderosa Pine windows gives added resistance where staining, decay, insect attack or humidity are problems.

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Your copy of a helpful booklet on Ponderosa Pine windows and doors is yours for the asking.

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Chicago 3, Illinois
Please send me a copy of "Today's Idea House." (Please print).

Name..

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City......................Zone......State........

THE RECORD REPORTS

(*Continued from page 16*)

will be accepted, but the Board will itself spend no money on direct research; its funds will be used for the study of research and wider applications.

The true motivating force behind BRAB can be summed up in Dr. Rassweiler's statement that too many decisions in the field of construction are now being made on opinions and not on facts. Take building codes as a case for illustration. Should BRAB decide to count building regulations as one of its fields for study, it would assemble and publish what it deemed necessary as basic building standards, disseminating this as fact for whatever use industry wished to make of it. There will be no compulsion, but possibly some persuasion will come into the picture as the board distributes its facts.

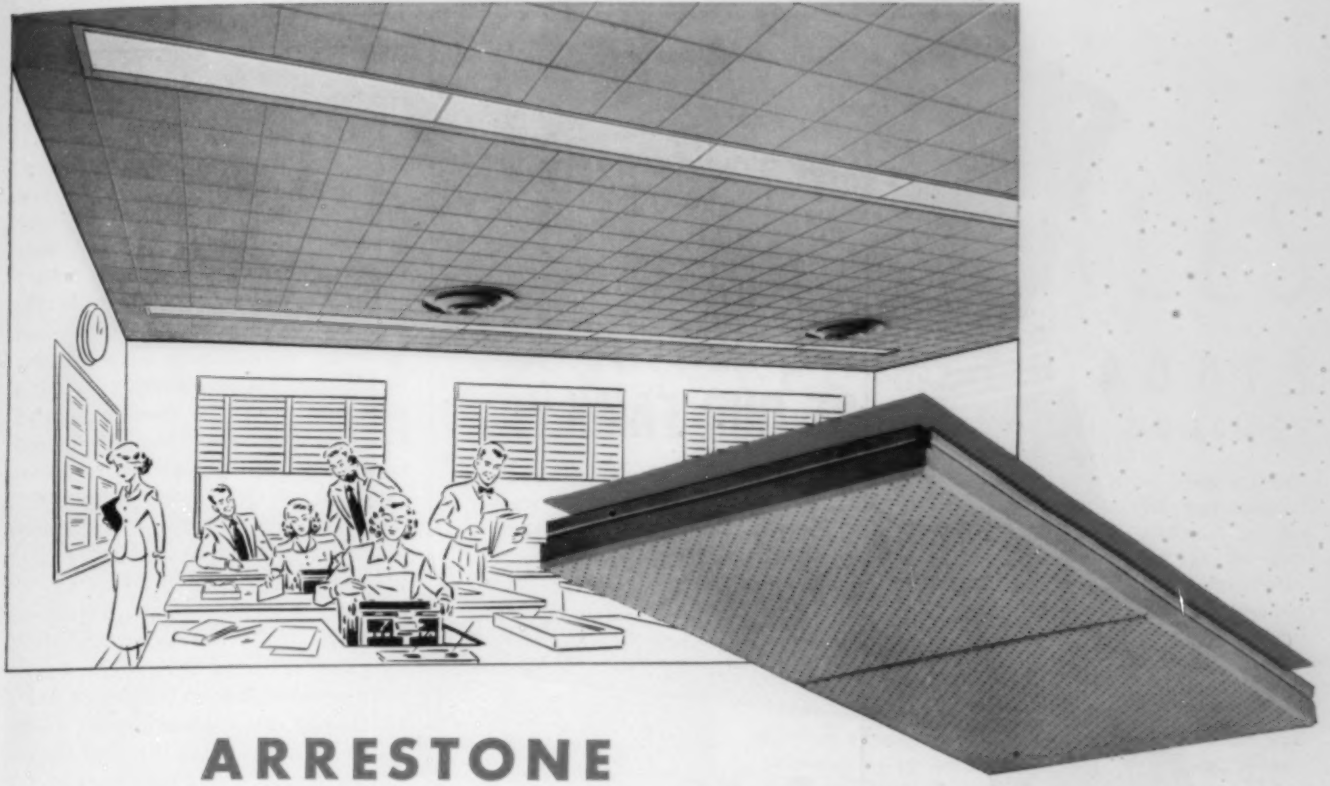
How Much Public Housing?

The Senate's Banking and Currency Committee has settled on a compromise figure of 810,000 for the number of public housing units to be constructed over a six-year period. This placed the average annual rate at 135,000 units, resolving temporarily at least an argument that had waxed hot during the three weeks a subcommittee and the full committee studied housing bills. The compromise between the prominent Democratic and Republican housing bills in the Senate brought the public housing figure more nearly into line with the Republican bill in the House, and helped to effect the return to bipartisan support in the upper chamber.

Senator Taft, who repeatedly has objected to any public program reaching beyond 10 per cent of the total home building volume, joined 10 other Republicans in sponsoring the Banking Committee bill along with 11 Democrats. Taft had said he would not support any bill calling for more than 150,000 public housing units per year.

The number of public housing units to be decided upon stirred up as much controversy during committee considerations as any other single issue. Apropos of this were news accounts that Census Bureau figures were unearthed by President Truman's advisers, purporting to show four million "hidden" dwelling units made habitable since 1940 but not taken into account in making out the case for legislation to construct 1,050,000

(*Continued on page 20*)



ARRESTONE

For highest acoustical efficiency

ARMSTRONG'S Arrestone is a top-performance acoustical material with an over-all noise-reduction coefficient of .85. In the middle sound frequencies (512 and 1024 cycles), Arrestone absorbs fully 99% of all noise striking its surface. Whenever efficiency is the major factor in selecting a sound-conditioning material, Arrestone meets the requirement fully.

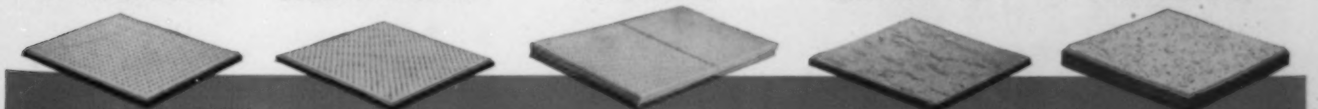
Armstrong's Arrestone is a metal-pan type acoustical material. The metal pan unit is 12" x 24" with a bevel dividing it into two 12" square tiles, each containing 1105 perforations. Inside the pan is a mineral wool pad wrapped in flameproof paper. A metal grid separates the pad from the pan so the entire surface of the pad effectively absorbs sound. Arrestone is officially rated as an incombustible material.

Mechanically suspended from the ceiling on metal runners, Arrestone units can easily be removed for electrical or air-conditioning repairs or for alterations. The metal pans have an all-over finish of white baked-on enamel and are therefore easy to keep clean. Armstrong's Arrestone can be repainted as often as desired with no loss of acoustical efficiency.

Whatever outstanding acoustical feature your plans call for—low cost, fire resistance, efficiency, beauty, or moisture resistance—there's an Armstrong acoustical material that meets the specification exactly. For complete details and specifications, see Sweet's File, Section 11a, or write direct to Armstrong Cork Company, Acoustical Department, 2404 Stevens Street, Lancaster, Pennsylvania.

*TRAVERTONE IS A TRADE-MARK FOR WHICH REGISTRATION IS PENDING.

low-cost **CUSHIONTONE®** *incombustible* **CUSHIONTONE F®** *efficient* **ARRESTONE®** *beautiful* **TRAVERTONE*** *moisture-resistant* **CORKOUSTIC®**



ARMSTRONG'S ACOUSTICAL MATERIALS

Made by the Makers of Armstrong's Linoleum

have a cigar, partner—
AND MEET
THE NEW "JUNIOR"
OF OUR FAMILY:
Guthlite Jr.

He's a chip off the old block, all right...the same "radiant glow" appearance and fine **precision-planned** lighting performance that's already made the original **Guthlite*** so successful. In fact, "JR." is the livin' image of his daddy except that he sports a "junior" price tag and has no "Jacknife" Hinge.

Instead, you merely release two little hooks on **either** side and the louver assembly swings down for easy relamping and cleaning.

Guthlite* JR. comes in both 2-40W and 2-85W sizes. For complete details, request our new Pocket Catalog 46A-J. Where you need a **proved** performer at a popular price, you can really cash in on this husky, handsome youngster ...take it from

YOUR TEAMMATE
IN *precision-planned* **LIGHTING**

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THE EDWIN F. GUTH COMPANY / ST. LOUIS 3, MISSOURI
Leaders in Lighting Since 1902

*® 720

(*Continued from page 18*)

public housing units in seven years as requested by the President. It was said that this "discovery" was causing some members of Congress to change their minds on the subject of housing need.

The housing agency was quick to take objection to these accounts. Raymond M. Foley, administrator of the Housing and Home Finance Agency, even filed a statement with the Senate Banking Committee denying these stories and supporting the President's proposed program.

Implications that the Census Bureau figures had been suppressed until shortly after the Administration bill was introduced in the Senate were vigorously denied by HHFA. The agency said these very Census figures were published more than a year earlier, on October 29, 1947, in *Current Population Reports Series P-70, No. 1*, and that the 1947 Census data were used extensively by the Joint Committee on Housing of the 80th Congress in its final majority report. This report came out on March 15, 1948. The figures also have been given wide publication, Foley's office claimed, in printings made by the agency itself.

But whether or not this tempest in itself bore directly on the Senate committee's decision, the fact remains that President Truman's requested volume of 1,050,000 public housing units for construction in seven years was pared down to 810,000 units in six years in the committee bill — a strong factor in restoring the bipartisan support that broke up during the earlier weeks of the 81st Congress.

A.I.A. Wants Local Control

The organized architects of the country, through A.I.A., approved construction of public housing for families of low income. Louis Justement of Washington, D. C., was spokesman for the Institute. He told the Senate subcommittee on housing: "We regret to see the administration of this important function (slum clearance) made subordinate to housing. Housing is only one part of urban redevelopment and should not become the controlling factor.

"If we approach urban redevelopment from the point of view of mere slum clearance, there will be a strong temptation to replace patches of blighted housing with patches of sanitary housing

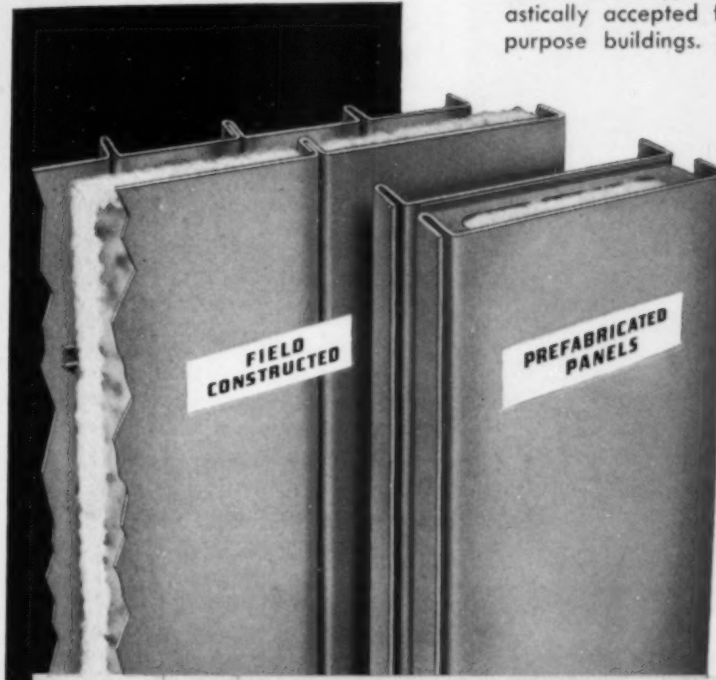
(*Continued on page 22*)

INSULATED STEEL WALLS

and STEEL DECK ROOFS

for INDUSTRIAL and COMMERCIAL BUILDINGS

Here are two types of Mahon Insulated Steel Walls which have been enthusiastically accepted for certain types of industrial, commercial and special purpose buildings. The "Field Constructed" Wall—which appears in the illustration below—has stiffening ribs at six inch centers on the outside of the wall . . . the inside surface of the wall is smooth, with an interlocking joint at one foot centers. Walls constructed with the "Prefabricated Panels" have stiffening ribs at one foot centers on the exterior side, while the inside surface is the same as the "Field Constructed" Wall. Pilaster effects, visible in the illustration below, are obtained by reversing standard wall plates. Where desirable, both types of wall can be furnished with exterior plates of Stainless Steel. Thermal properties are excellent—Coefficient "U" is equivalent to an 18" solid masonry wall. This type of wall construction in combination with Mahon Steel Deck Roofs costs less, provides a firesafe, permanent building which can be quickly and economically erected. Complete information and construction details appear in Sweet's Architectural and Engineering Files.



THE R. C. MAHON COMPANY
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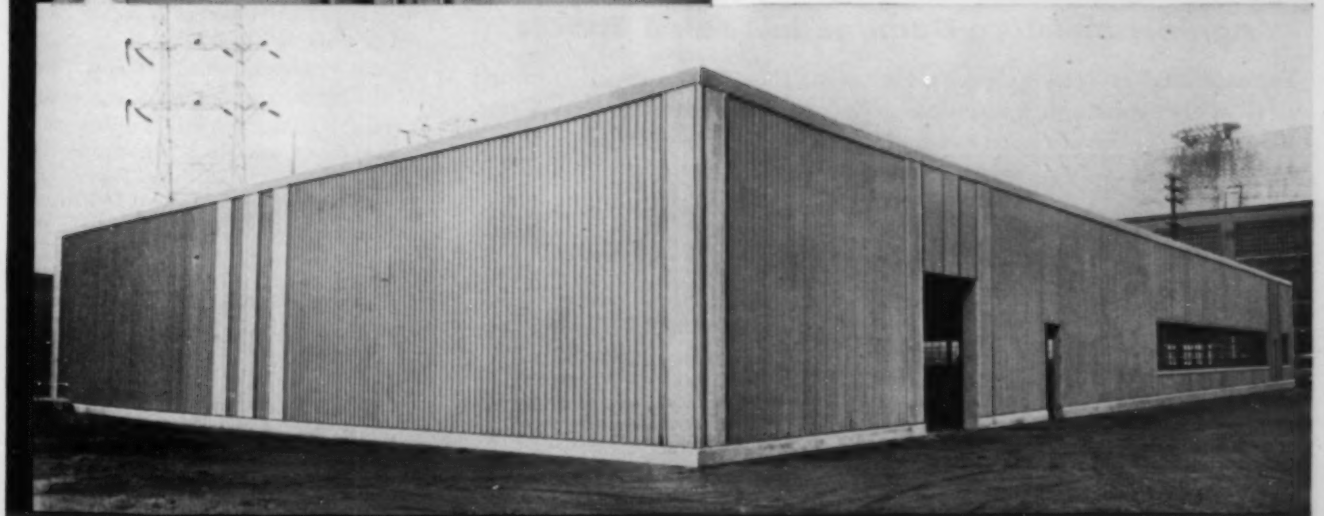
Manufacturers of Insulated Steel Walls, Steel Deck for Roofs, Ceilings, Floors, Partitions and Doors. Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.



The building above, 80 ft. x 160 ft., was constructed with Mahon Insulated Steel Walls and Mahon Steel Deck Roof for Consumers Power Co., Jackson, Mich.

MAHON

Stop Hidden RUST
with
RUST-OLEUM

Tough, elastic, enduring—Rust-Oleum defies rust-producing conditions years longer—protects the *structural strength* of steel.

Industry-proved Coating Rustproofs Metal Against Moisture Damage in Sealed Spaces

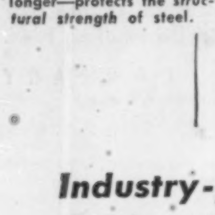
For structural protection, specify the use of Rust-Oleum on all iron and steel — particularly in inaccessible areas where condensation causes rust. Rust-Oleum positively stops rust and adds years of life to structural members, pipes, sheet metal, etc. which are difficult or impossible to reach in normal maintenance.

Indoors or out — Rust-Oleum seals metal with a tough, pliable, destruction-proof coating. Originally developed to resist the highly corrosive effects of salt water and salt air, under tough sea-faring conditions, Rust-Oleum gives lasting protection where ordinary materials fail. It's *your* best answer to all rust problems.

We will gladly offer specific recommendations on Rust-Oleum application and uses, if you will give us full information as to technical requirements. See the complete Rust-Oleum catalog in Sweet's, or write for a copy.

PERSONAL — Do you have a rust problem? We'll be glad to send a free sample for a test application on your car or at home. Be sure to state color preference. There is no obligation, of course

Rust-Oleum is available through industrial distributors in most principal cities



RUST-OLEUM CORPORATION
2479 Oakton Street Evanston, Illinois

(*Continued from page 20*)

without striving for improvements in the entire city pattern."

Throughout the A.I.A. testimony ran an emphasis on the desire for less federal control and more latitude for local administration of any housing programs. Objection was raised, for example, to that section of the legislation which makes federal assistance contingent on modification of local building codes and local building practices. This part of it, said Justement, might and probably would result in the preparation by the housing administrator of certain federal standards to be followed. The A.I.A. sees in such a possibility the chance for additional sources of resentment on the part of local communities with respect to dictation by federal government, and therefore called for the section to be eliminated.

Relocation a Local Problem

Congress was urged in the Justement statement to leave to the local communities much wider freedom in solving the relocation problems for families moved away from a housing project site. Local officials know better how to cope with these situations and it costs the government less, reducing red tape at the same time.

In the planning and design of individual projects to be built under the proposed federal law, A.I.A. wants to see local housing authorities given the "widest possible latitude."

Said Justement on this subject: "One of the legitimate complaints concerning public housing projects is that they suffer from excessive standardization and that local initiative and ingenuity is handicapped by needless red tape due to the formulation of 'standards' by the public housing authorities. We are firmly convinced that local authorities should be encouraged to rely on their own ingenuity in meeting their own problems in their own way. While some of the more inexperienced local authorities may make mistakes, these will be offset by the better results secured by others when freed from central controls.

"There is no magic formula in housing and we have tried everything to gain from experimentation and the application of trial and error methods based on competitive striving for the best result. The function of the federal government

(*Continued on page 24*)

Specify..

Duran
all plastic
UPHOLSTERY
COVERING

for

VERSATILITY

BEAUTY • WEAR

DURAN—for unexcelled resistance to wear, fading, scuffing. Easily cleaned—a damp cloth removes dirt, perspiration, grease, alcohol.

DURAN—for decorative harmony on chairs, booths, panels, table tops. An array of colors to embellish any setting.

DURAN—the luxury emphasis that completes wise planning. Send for samples.

DURAN in your plan means lasting client satisfaction.

Duran—fresh, lustrous beauty on restaurant booths and seats.

Duran—color and comfort that withstands hard everyday use.

No flaming—self extinguishing from burns
Resists damage from spills — easily cleaned

Duran—diversity that's smart.

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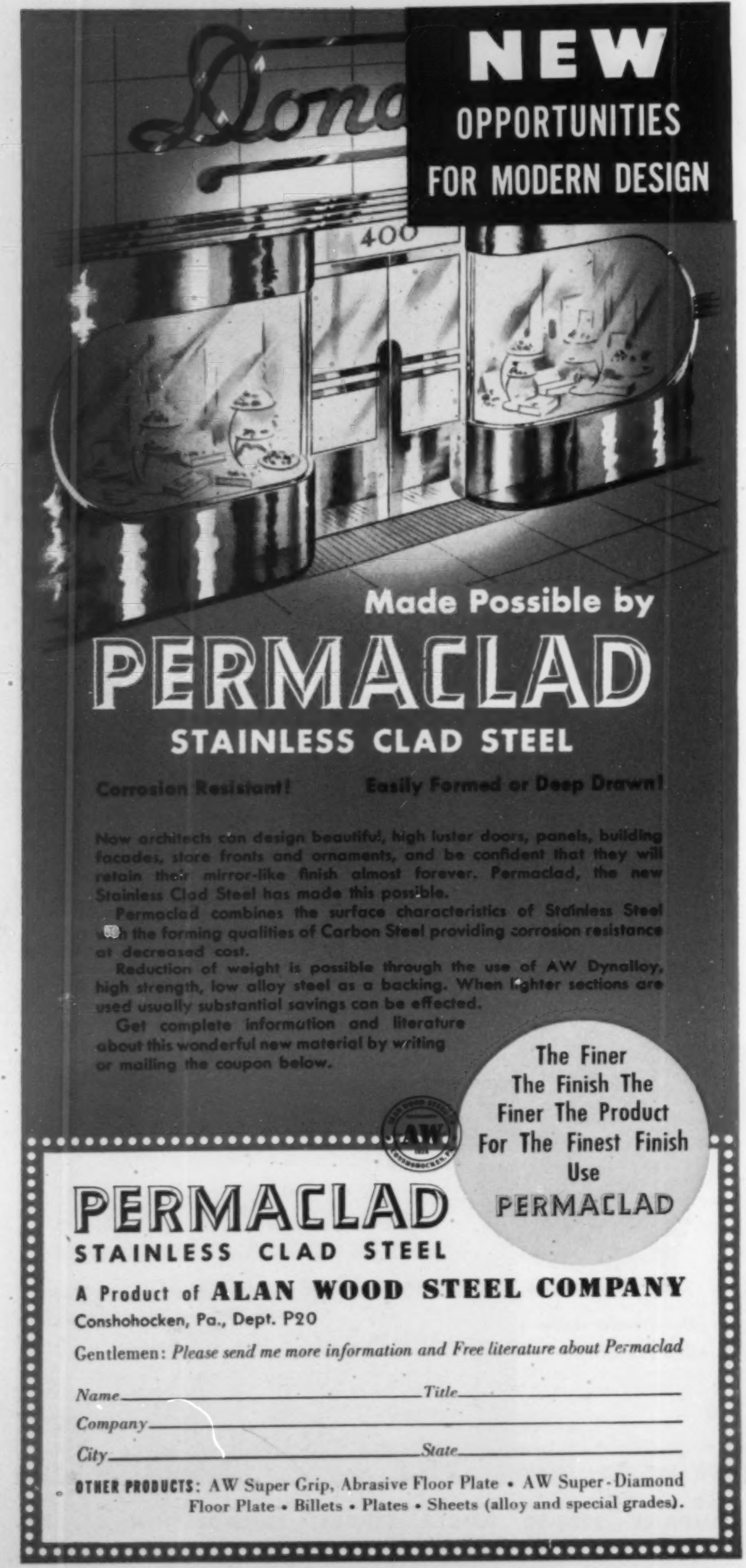

NEW OPPORTUNITIES FOR MODERN DESIGN

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STAINLESS CLAD STEEL

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Now architects can design beautiful, high luster doors, panels, building facades, store fronts and ornaments, and be confident that they will retain their mirror-like finish almost forever. Permaclad, the new Stainless Clad Steel has made this possible.

Permaclad combines the surface characteristics of Stainless Steel with the forming qualities of Carbon Steel providing corrosion resistance at decreased cost.

Reduction of weight is possible through the use of AW Dynalloy, high strength, low alloy steel as a backing. When lighter sections are used usually substantial savings can be effected.

Get complete information and literature about this wonderful new material by writing or mailing the coupon below.

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A Product of ALAN WOOD STEEL COMPANY

Conshohocken, Pa., Dept. P20

Gentlemen: *Please send me more information and Free literature about Permaclad*

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OTHER PRODUCTS: AW Super Grip, Abrasive Floor Plate • AW Super-Diamond Floor Plate • Billets • Plates • Sheets (alloy and special grades).

THE RECORD REPORTS

(*Continued from page 22*)

in housing should be that of assisting the municipalities financially (because of their limited sources of income) and not that of needless detailed control over the planning and design of individual projects."

Odds and Ends

—A fund of $40 million to be spent by the Public Buildings Administration for planning future federal structures and acquiring land for their location has been authorized by the Senate Public Works committee. The bill also carries a fund of $30 million for repair of present structures such as post offices and court houses. Purpose of the planning is to have a building schedule in readiness if employment and construction recede markedly. PBA has brought up to date its listing of proposed post office construction, city by city, and under the Senate Public Works Committee bill would be empowered to map the federal building needs of towns and cities for the "near and distant future," and to acquire sites.

—Another survey conducted by the Associated General Contractors among member chapters has indicated that construction costs now are stabilizing or showing a tendency to decline. This is in sharp contrast to a similar AGC survey six months ago. In mid-summer of 1948 most of the contractors could see nothing ahead but rising prices and continuing material shortages. Now they report that while they expect continued high construction volume through 1949, their costs are leveling off and may go down slightly. Material supplies are improving substantially and critical shortages of skilled labor seem to be passing. In all, it is one of the more optimistic reports from a large collective segment of the industry since the end of the war.

—The worldwide shortage of skilled labor in construction is less now than immediately after World War II but it will be more serious if building programs now planned go ahead as scheduled. This comes from the International Labor Office study on recruitment and training in the construction industries. Largest pool of potential workers was found to be in Italy. ILO proposes that building mechanics be trained in two or three connected trades to make them more

(*Continued on page 164*)

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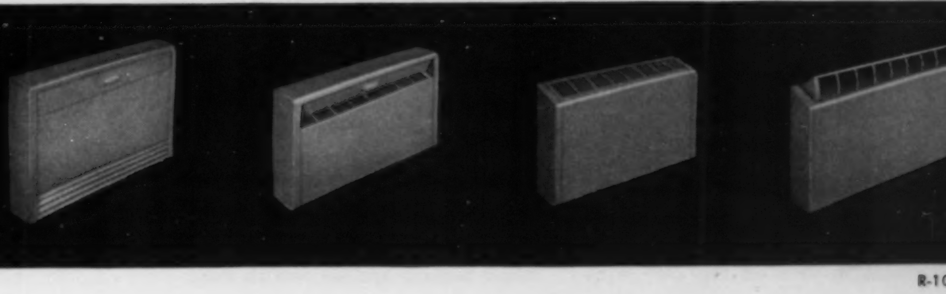

R-1013-ar

REQUIRED READING

HOUSING FAR AND WIDE

Housing and Town and Country Planning. United Nations Publications Sales No. 1948-IV-7. International Documents Service, Columbia University Press (2960 Broadway, New York 27, N. Y.), sales agent. 8½ by 11 in. 74 pp., illus. $1.50.

In the Foreword to this first issue of the United Nations Bulletin on Housing, the aim of the publication is stated as "to provide information useful to policy-making officials and administrators on the one hand and to technicians on the other. The information will, as far as possible, embrace significant developments of a technological, legislative, sociological and economic character in all parts of the world." The Bulletin, in other words, will be a sort of clearing house for developments in housing and town and country planning the world over.

This first issue promises well for the future of the publication. Included are articles on Great Britain, the Far East, Continental Europe, India, Poland and Sweden. Some of these give general pictures of the housing situation in the countries discussed; others, notably the one on India, describe concrete planning programs already in effect.

If these chapters alone made up the first issue of the Bulletin, the Economic and Social Council of the U.N., which publishes it, would deserve congratulations. But there are other articles, too: "The Current Change in Civic Hopes and Attitudes," by Catherine Bauer; "Mass Production to Relieve Housing Shortages," by Maciej Nowicki; "A New Building Material — Paper Honeycomb-Core 'Sandwich' Panels," an extract from an HHFA bulletin; a report on the 19th Congress of the International Federation for Housing and Town Planning. And to top it all off, there is a lengthy and detailed bibliography of books, pamphlets and periodicals in various languages.

HOUSE FRAMING

Small House Carpentry: Framing, Sheathing, Insulation. Based on the Industry Engineered House. By Training-Thru-Sight Associates, Lee Frankl, Director. Prentice-Hall, Inc. (70 Fifth Ave., New York 11, N. Y.), 1948. 8¼ by 10¾ in. 100 pp., illus. $2.95.

Of all the interesting developments to come out of the Industry Engineered House, this manual is one of the least expected. Yet it is a perfectly logical development in view of the care with which every detail of that project was worked out.

Following an introduction by Gordon Lorimer describing the Engineered House Program, the text turns to an elementary and thoroughly diagrammed description of how to frame, sheathe and insulate. Step by step, starting with the selection of materials, the authors take the reader through the entire process, furnishing not only diagrams but tables of nail sizes, lumber dimensions, etc.

This is a book, obviously, more for the amateur builder than for the professional architect, but it certainly will prove extremely useful to the architectural student and should prove to be of interest to the graduate architect as well, particularly because of its connection with the Engineered House project. In effect, this book is one more report on the research undertaken in that project.

HEATING THE HOME

Audels House Heating Guide, Including Ventilating and Air Conditioning. By Frank D. Graham. Theo. Audel & Co. (49 W. 23rd St., New York 10, N. Y.), 1948. 5 by 6½ in. 966 pp., illus. $4.00.

The close to a thousand pages of this new textbook on heating and air conditioning are jam-packed with practical information in capsule form. Subjects covered range from an introductory chapter on thermal physics to furnace firing and an explanation of dew point. Most of the text is arranged in question-and-answer style, with both questions and answers kept brief and held to lay terminology as much as possible. Tables, diagrams and cut-away drawings are numerous and clear.

Some idea of the scope of the volume can be gained from the following fractional list of chapter heads: Hot Air Furnaces; Hot Air Heating Systems; Steam Heating Systems; Radiators, Convectors and Unit Heaters; Points on Piping; Radiant Heating; House Insulation; Heating Calculations; I-B-R Code; Attic Ventilation Fans; Refrigeration for Air Conditioning; Cooling with Steam.

On the whole a basic book, and intended chiefly for the mechanical engineer and the building superintendent, this new Guide is comprehensive enough to be a handy reference book for the architect, and to give him quick answers to many of his questions about house heating and air conditioning.

A ROMANTIC COMMONPLACE

A History of Cast Iron in Architecture. By John Gloag and Derek Bridgwater. George Allen and Unwin Ltd. (London) 1948: distributed by The Macmillan Co. (60 Fifth Ave., New York). 9⅜ by 11¼ in. xx + 395 pp., illus. $18.00.

Cast iron, as British Architect Sir Charles Reilly says in his foreword to this volume, is "one of the most ordinary of building materials, finding its way in half-a-dozen forms into every building, yet it is safe to say very few architects have given to it or to its manufacture more than a few moments of thought." Sir Charles is right: architects will be little short of amazed at the romantic history of this presumably humble material and at its potentialities set forth by Messrs. Gloag and Bridgwater.

Most of the book, of course, is given over to a history of cast iron from the iron beads found in an Egyptian cemetery of 4000 B.C. to the most streamlined gas range of the 20th century. A crowded 34-page introduction summarizes the early history of iron from the groping Stone Age beginnings through the middle of the 17th century. The balance of the book is divided into five sections, each dealing with a period of from 40 to 100 years. Of these the second ("The New Material in Architecture" — 1750–1820) will be of especial interest to the architect since it traces the first use of cast iron in pipes, bridges, buildings, and so on. "The oldest cast iron pipes of which definite records exist," say the authors here, "were laid between 1664 and 1696 in the Palace gardens of Versailles where they still supply the fountains." And again: "The first successful use of cast iron beams as structural units in a building was in a cotton mill erected in 1801 by Messrs. Phillips & Lee in Manchester." "The first cast iron railings recorded were those used round St. Paul's Cathedral, which were fixed in 1714. . . . Sir Christopher Wren disapproved of them. . . . Some are still in place."

Over 500 photographs are used with excellent effect to illustrate the multitudinous uses of cast iron through the centuries. These alone are enough to stir the imagination of the architect. Messrs. Gloag and Bridgwater have produced a book which is as interesting and stimulating as it is documentary.

(*Reviews continued on page 30*)

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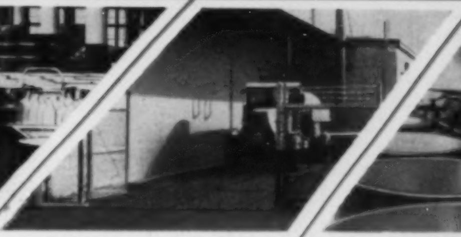

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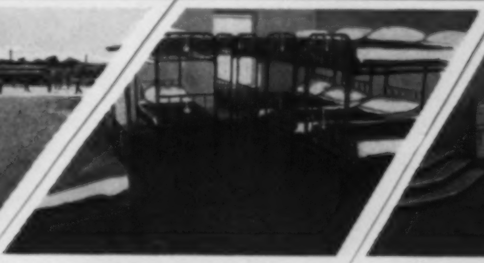

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REQUIRED READING

(*Continued from page 28*)

TWO BY-GONE STYLES

(1) An Introduction to Regency Architecture. By Paul Reilly. (2) An Introduction to Victorian Architecture. By Hugh Casson. Pellegrini & Cudahy, Inc. (65 Fifth Ave., New York 3, N. Y.), 1948. 7 by 9 in. 96 pp. each, illus. $2.50 each.

There is a charming nostalgia to these two small volumes from England which goes happily with the historical note of the more ambitious book reviewed just above. Unpretentious, and claiming to be no more than brief essays, they lay gentle fingers on the characteristics of the two periods.

Of the two, the first may be of slightly more interest to architect readers than the second because of the brief biographies of Regency architects appended by Mr. Reilly. Included in the group are John Nash, James Wyatt, Sir John Soane, Charles R. Cockerell, Decimus Burton, and others of like calibre. Mr. Reilly traces family background, education and accomplishments of each, thereby giving a brief over-all picture of the profession as it was a century or more ago. The careers of many of these men, of course, extended into the Victorian era, and so are discussed also by Mr. Casson. In a sense, therefore, the two volumes are but two acts of the same play.

GUIDE TO RADIANT HEATING

Radiant Heating. By Richard Woolsey Shoemaker. McGraw-Hill Book Co., Inc. (330 W. 42nd St., New York 18, N. Y.), 1948. 5¾ by 9 in. 306 pp., illus. $4.00.

In contrast to most of the current literature on radiant heating, this book does not approach the subject from either a highly technical or a glamorous angle. Its purpose is to tell in easily understood terms what radiant heating is, where it is applicable and how the systems are designed and installed. And as such it is intended for use by architects, engineers, prospective home builders and contractors.

It is quite comprehensive in sections dealing with the location and installation of radiant panels, controls and the heating plant. In the design section several simple methods and a precise one are presented for determining panel areas. The book covers the field of hot water radiant heating, but does not take up electric or hot air systems. One chapter discusses the possibilities of radiant cooling.

ARCHITECTURAL

RECORD

MIND READING?

Will Rogers used to say, "All I know is what I read in the papers," but I remember Fred Ackerman went him one better in saying, "but I get a lot more from what I read between the lines." One shouldn't take all one's literature too literally. One's own critical analysis is essential to getting the most and the best out of one's professional magazines. And we'd be willing to wager that there is some, even much, worth-while information and inspiration for every architect in every issue of his professional magazine.

Different readers get different things from the same magazines, depending on age, background, needs, interests, points of view, prejudices, perception, receptivity, alertness, personal problems, and past or present condition of servitude. Then, too, what you get out of a particular issue depends on your own attitude and faculties for critical analysis — and to some extent on your ability to read between the lines.

Professional journals are edited with the prime purpose of providing architects with *ideas*, current ideas, newsworthy ideas, and these are presented in word, picture, plan, detail, diagram and table for your information — and for your acceptance, adoption, use, and even inspiration. The ideas presented are always subject to your own critical analysis and for you to select, adopt, adapt, or improve those which will be most useful in your own practice. And conversely — those which seem illogical, fantastic, impractical or ugly can be rejected when you have proved them so to yourself. But even in this process of negation, there is value to you in stimulating your creative imagination to solve that same problem in a better way, the way it should be, your way. If you don't agree, you at least strengthen your own logical (or intuitive) conviction and have thus benefitted.

Our plea is obviously for your thoughtful, analytical and open-minded use of the magazines that are designed to provide you with the current forward-looking thought and practice. For one of the great traditions of architecture is that the newest and best (and the worst) is available to all to adopt, adapt, and improve upon. As we have said before, current standards are most valuable only if used as springboards to new and better ones. The danger comes from accepting unthinkingly, uncritically, lazily, an idea, a form, a detail — for that way lies stagnation, monotony, and the perennial perpetration of clichés. We have seen too much of that, too many of our younger designers failing to ferret out the reason for the form they so freely borrow.

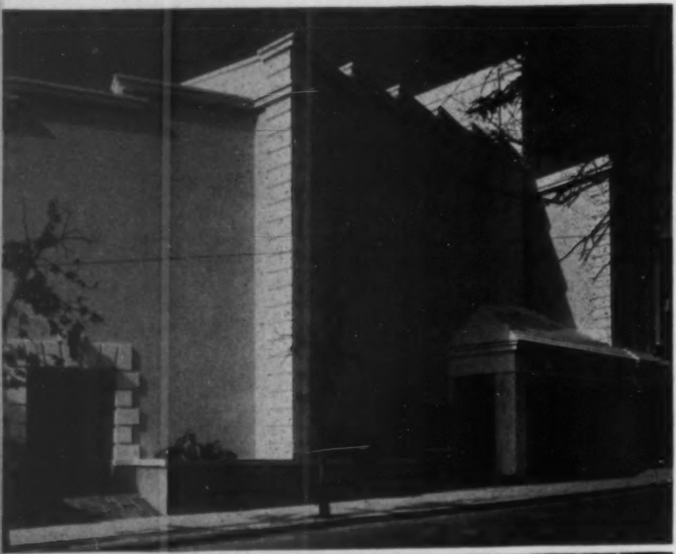
So when you go through all the pages of each issue of your professional journals, why not *ask yourself* what are the good points in this? what are its faults? how would I improve the former and eliminate the latter? Why was this done — just to be different or to solve that problem in a more simple, direct, efficient, or more beautiful way? Why do I like this? Why don't I like that? How and where and when can I use something like that? And you'll be surprised how much the lines — and what's between them — will mean to you. Mind reading that way?

Kenneth K. Stowell
EDITOR

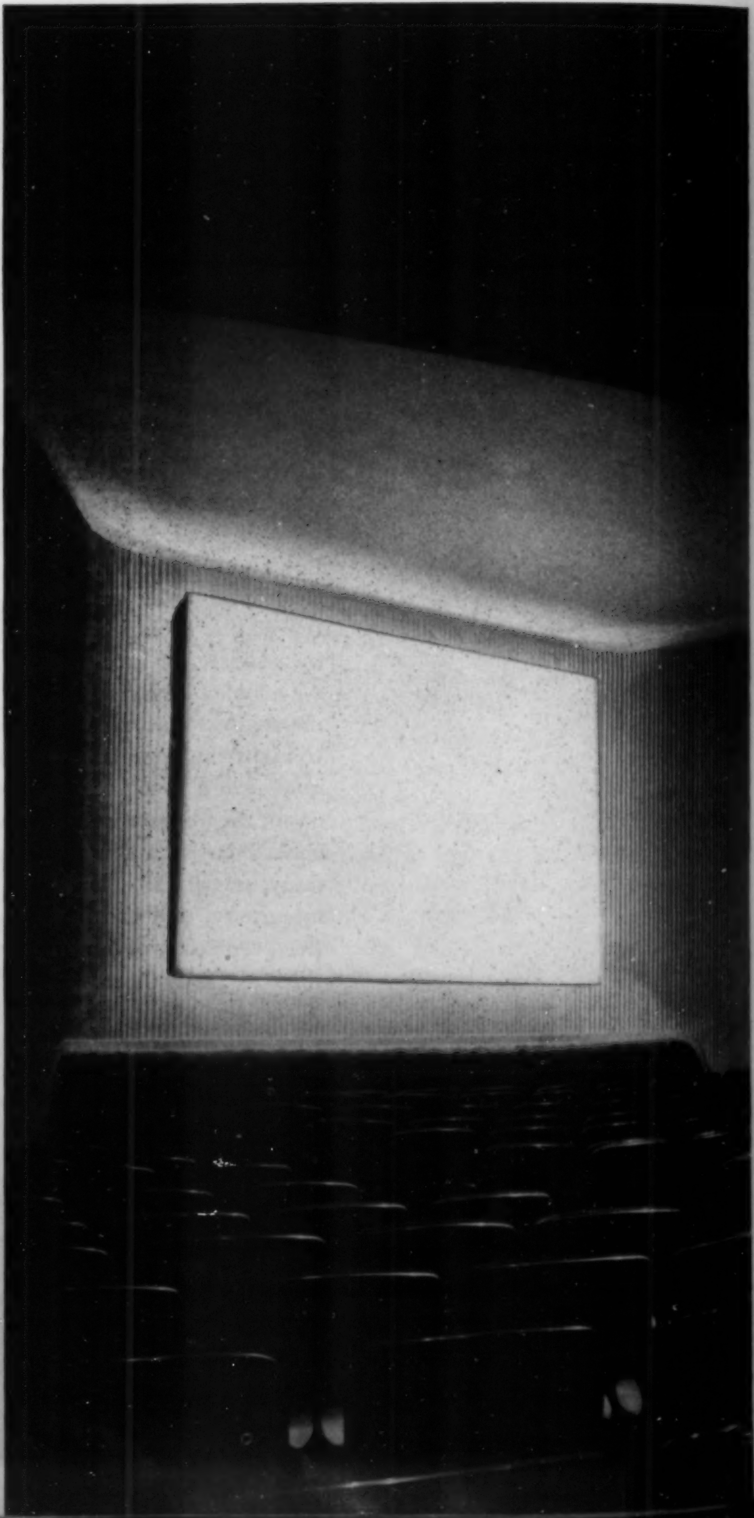
"Island Theater," Hamilton, Bermuda

A BERMUDA THEATER WITH "FLOATING SCREEN"

Schlanger & Hoffberg, Architects; Reisner & Urbahn, Architects



THE ISLAND THEATER



The Island demanded that the theater conform to its coral-rock and pink-stucco architectural mode; the cramped lot demanded exploitation of every angular inch (not one right angle in the entire plan); and luck smiled on the enterprise, to give it quiet charm.

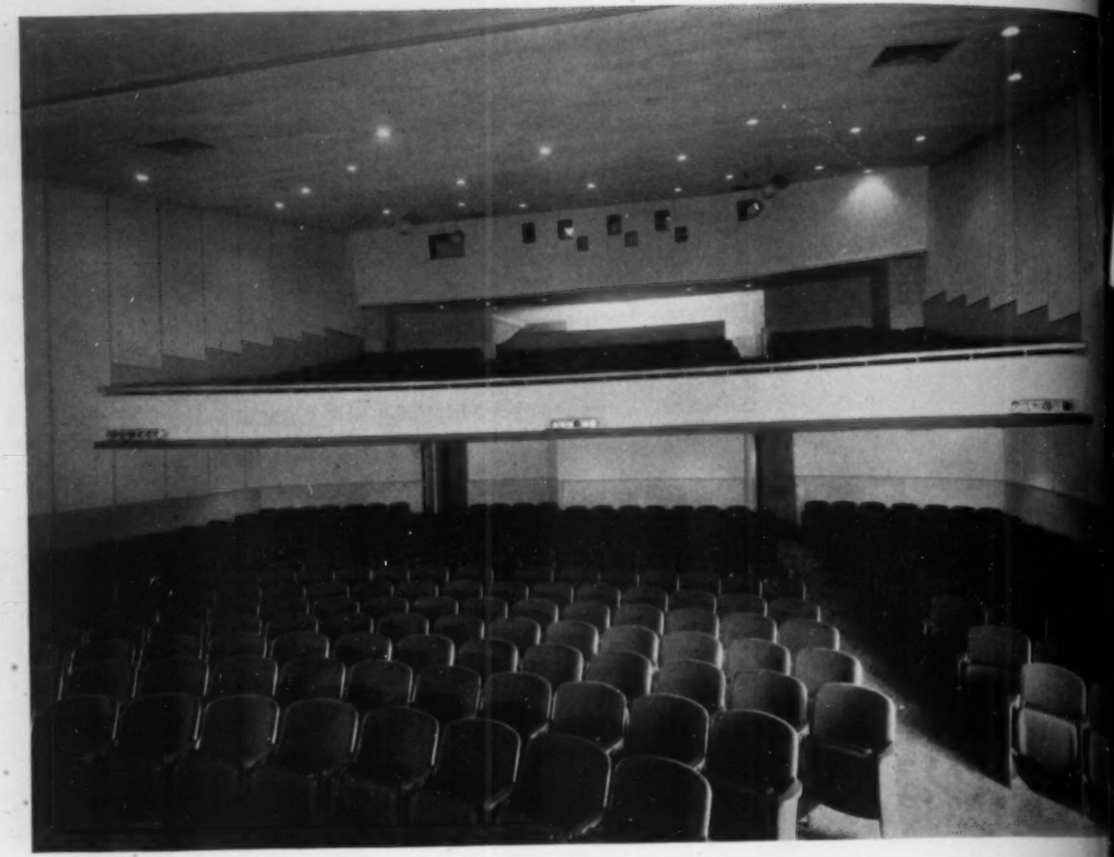
Entering, through a neat clean range of plexiglass floors flanked by a marble wall and by reeded wooden screens, the patron finds himself in a cultivated place. An upper, mezzanine lounge gives an open view to the entrance for those awaiting friends; both this and the lower lounge are served by toilets carefully stacked to conserve piping and water, both being premium items.

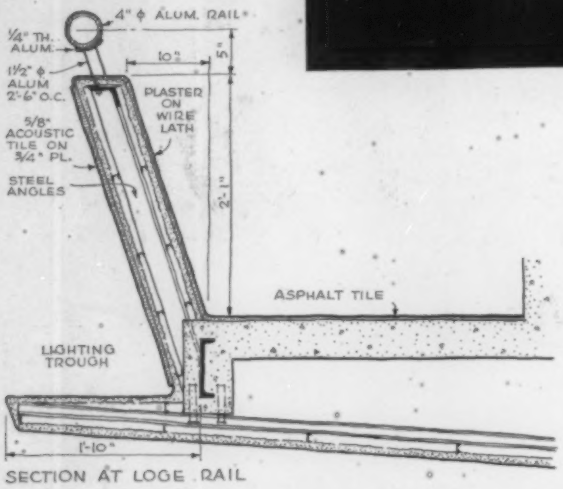
In the auditorium the effect is perhaps best of all. The screen, "floated" as seen in details on page 91, is unmasked; the patented arrangement of screen and surround gives synchronous lighting of the surround by light spilled from the picture, destroying sharp contrast, fading hard outline, varying with picture intensity. During short features, this surround is softly lighted up by bulbs from behind.

No irrelevant decoration is allowed to interfere with this pleasant dramatic effect.

Elliot Clarke Photos

Elliot Clarke Photos

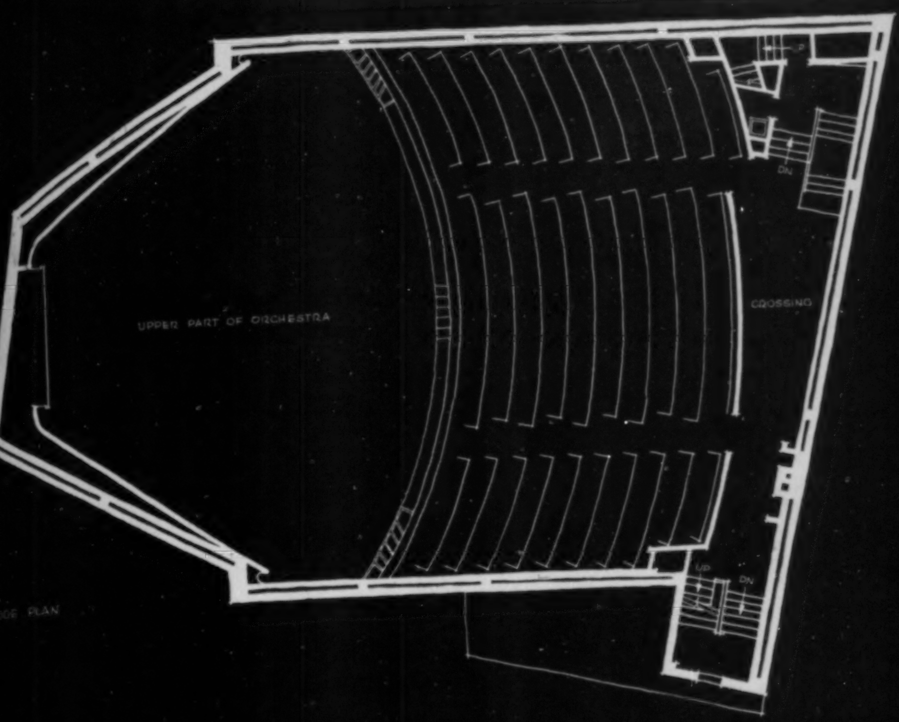



4" ϕ ALUM. RAIL
1/4" TH. ALUM.
1 1/2" ϕ ALUM 2'-6" O.C.
10"
5"
PLASTER ON WIRE LATH
5/8" ACOUSTIC TILE ON 3/4" PL.
STEEL ANGLES
2'-1"
ASPHALT TILE
LIGHTING TROUGH
1'-10"

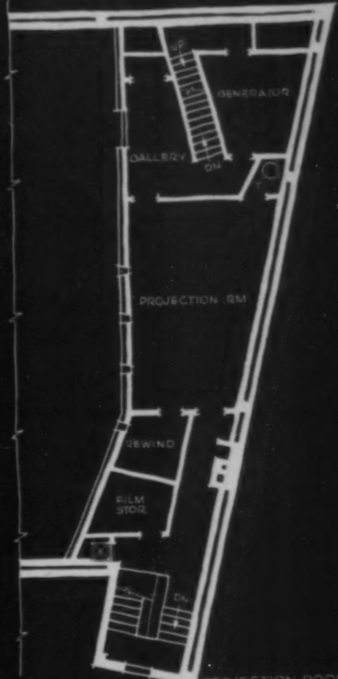
SECTION AT LOGE RAIL

The theater seats 650, including 200 in the radial mezzanine. Walls are gray in the corrugated plaster section near the screen, cream elsewhere; ceiling is sand-finished plaster painted gray-green; chairs are upholstered in blue-green, coated fabric on seats, mohair on backs. The mezzanine parapet fascia (detail at left) is hard plaster, painted gray, and angled to reflect sound downward. Downlights light house and aisles

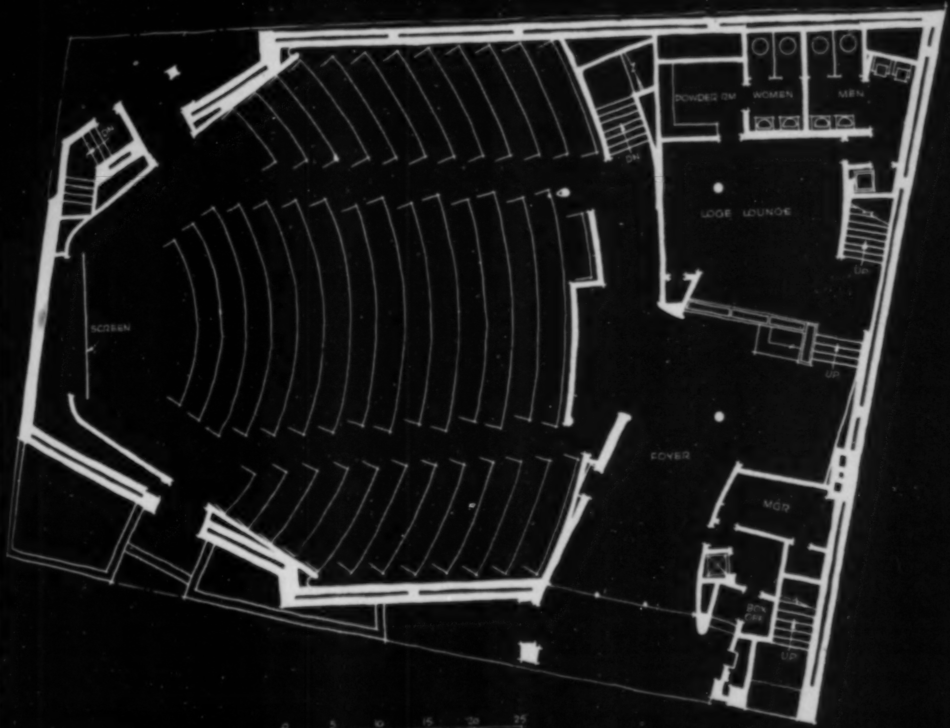
The loge lounge, shown below, commands a good view of main entrance and lobby and forms a convenient meeting place. A second lounge, not shown, is located directly below (see plans and section, opposite page), with patrons' facilities stacked to conserve piping

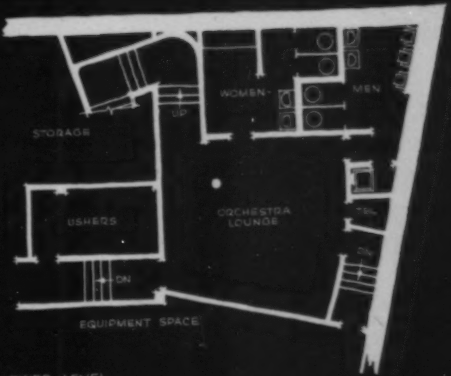

UPPER PART OF ORCHESTRA
CROSSING
UP
DN
UP
DN

OGE PLAN


UP
GENERATOR
GALLERY
DN
PROJECTION RM
REWIND
FILM STOR.
DN

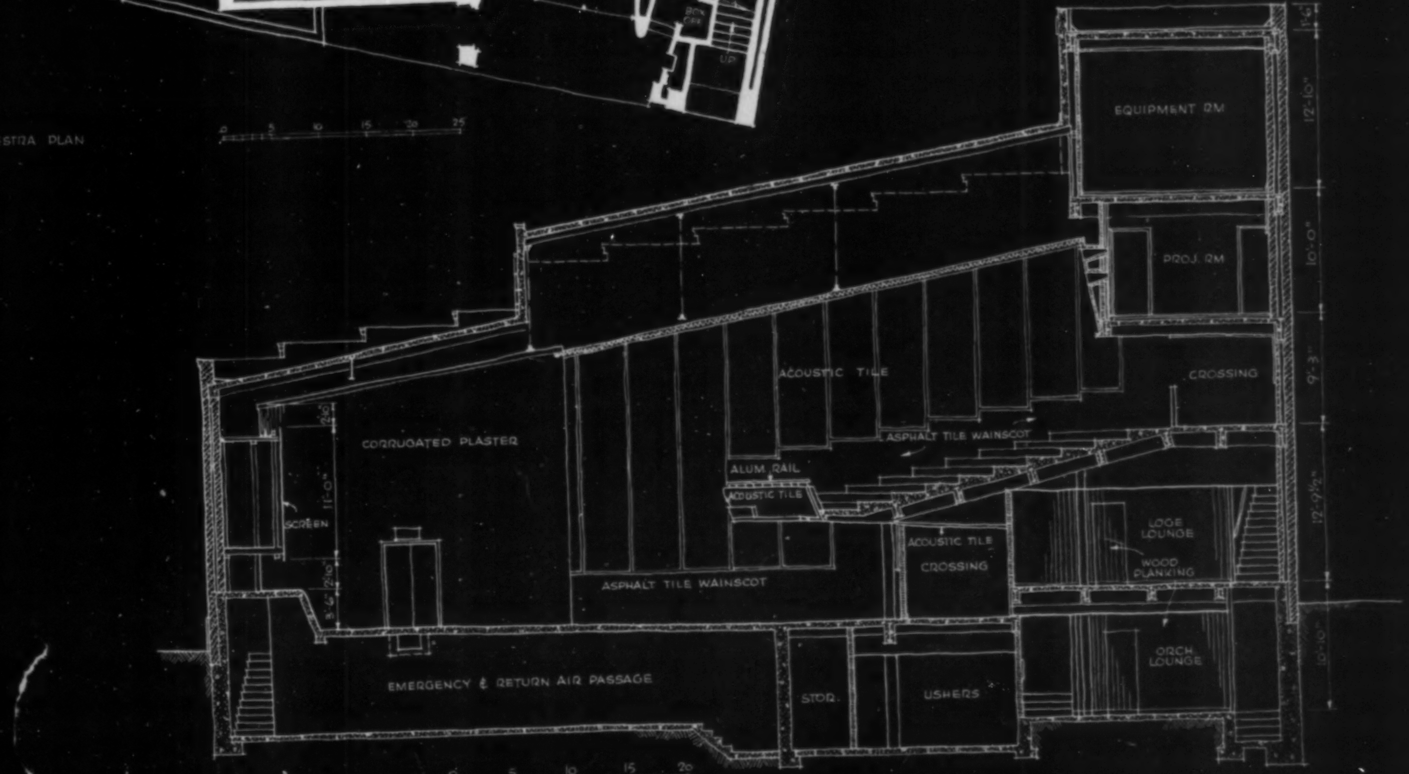
PROJECTION ROOM


DN
POWDER RM
WOMEN
MEN
DN
LOGE LOUNGE
UP
SCREEN
UP
FOYER
MGR
BOX OFF
UP
0 5 10 15 20 25

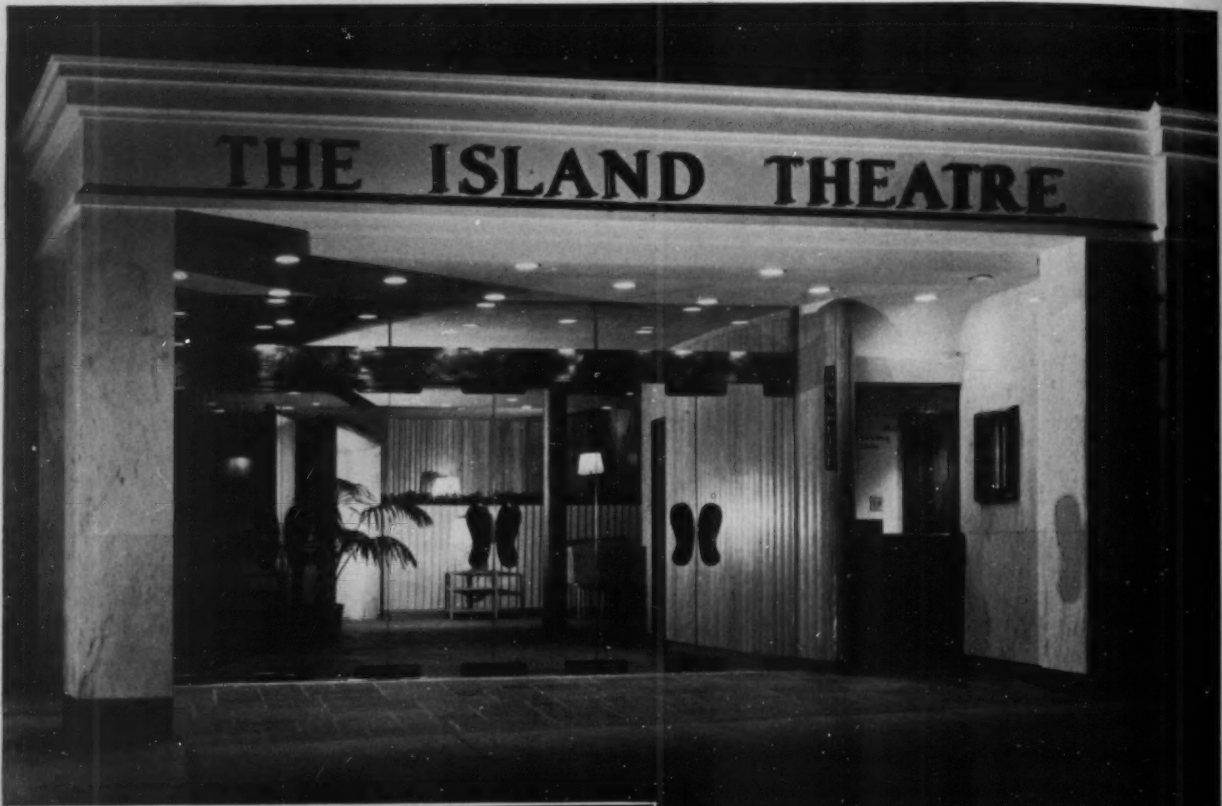

STORAGE
UP
WOMEN
MEN
USHERS
ORCHESTRA LOUNGE
DN
DN
EQUIPMENT SPACE

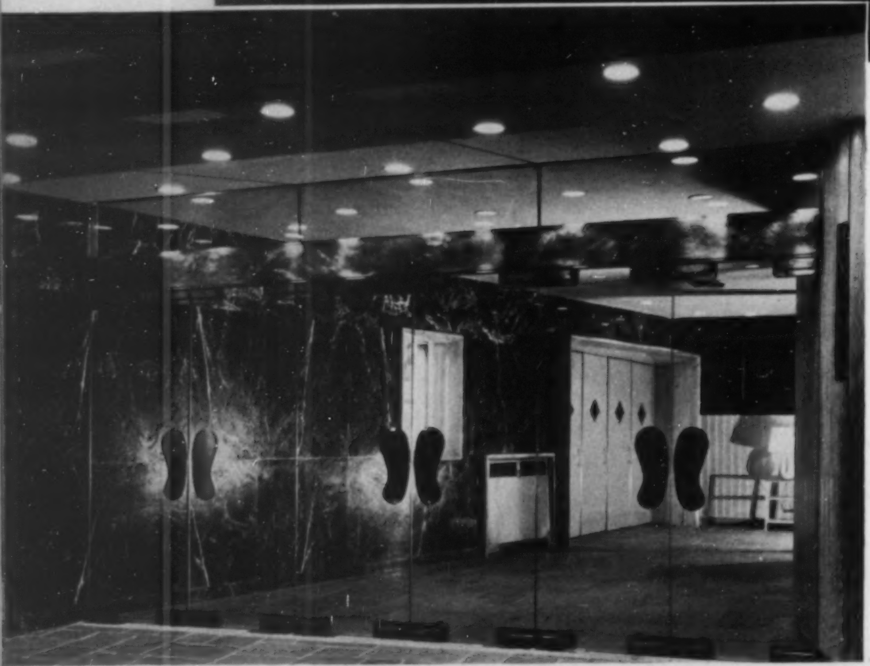
LOWER LEVEL

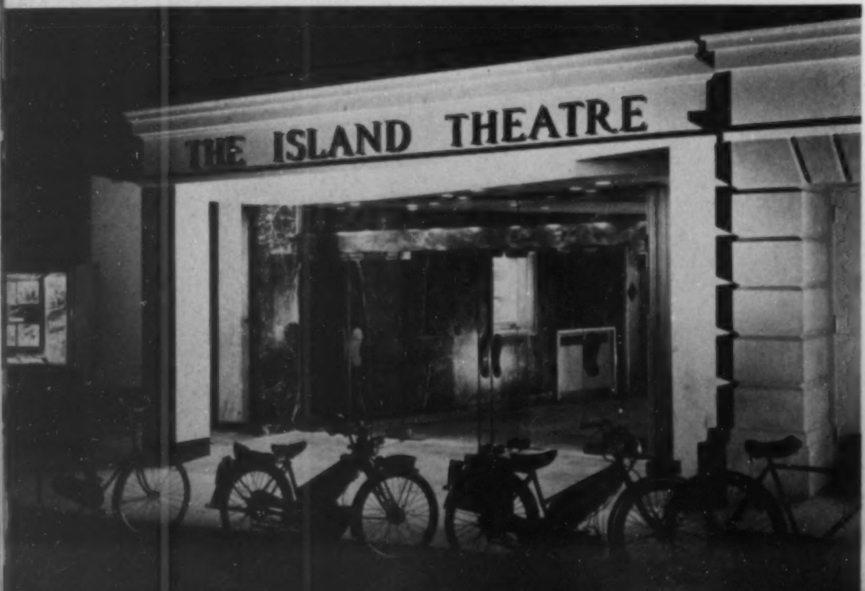
ORCHESTRA PLAN


1'-6"
EQUIPMENT RM
12'-10"
PROJ. RM
10'-0"
CROSSING
9'-3"
ACOUSTIC TILE
ASPHALT TILE WAINSCOT
CORRUGATED PLASTER
ALUM. RAIL
ACOUSTIC TILE
12'-9½"
11'-0"
SCREEN
ACOUSTIC TILE
CROSSING
LOGE LOUNGE
WOOD PLANKING
ASPHALT TILE WAINSCOT
ORCH. LOUNGE
10'-10"
EMERGENCY & RETURN AIR PASSAGE
STOR.
USHERS
0 5 10 15 20

LONGITUDINAL SECTION

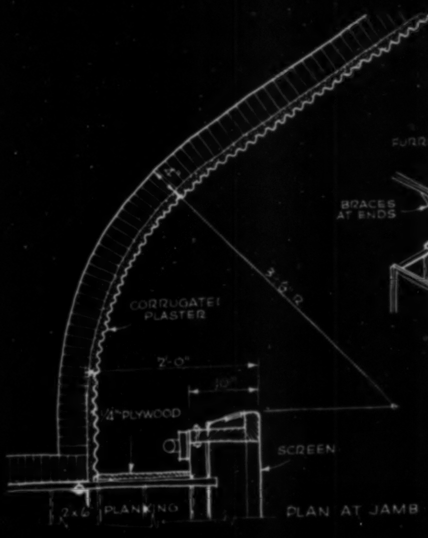




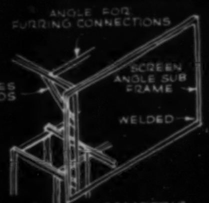


Elliot Clarke Photos

Instead of a marquee, the theater has an open vestibule or portico, tied to the foyer by a flagstone floor which is continued as far as the auditorium doors. The plate glass entrance doors have bronze hand and kick plates, and the free-standing display case (seen at extreme left of bottom photo on this page) is also bronze. Foyer walls are green marble on the auditorium side, natural-finish oak boards opposite; vestibule walls are white marble. Across-page: plans and sections of the unique "floating screen," and a projection view showing the soft lighting of the surround used for short features

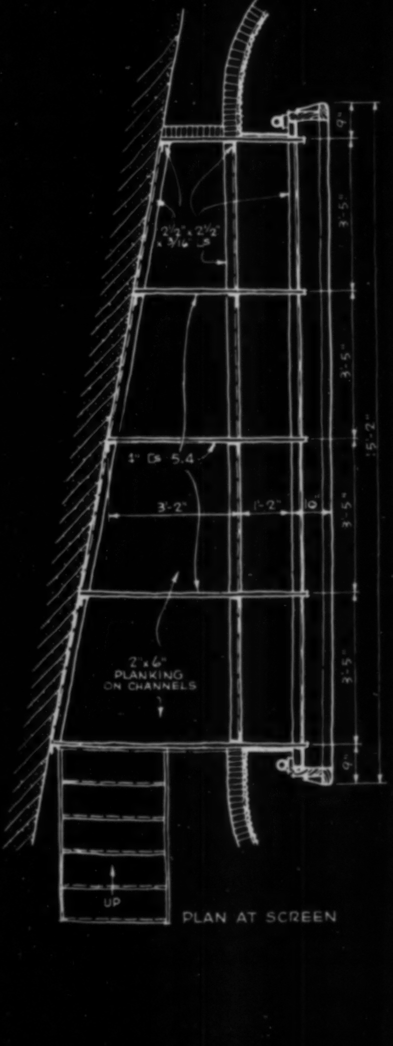

3'-6" R
CORRUGATED PLASTER
2'-0"
10"
1/4" PLYWOOD
SCREEN
2 x 6" PLANKING

PLAN AT JAMB

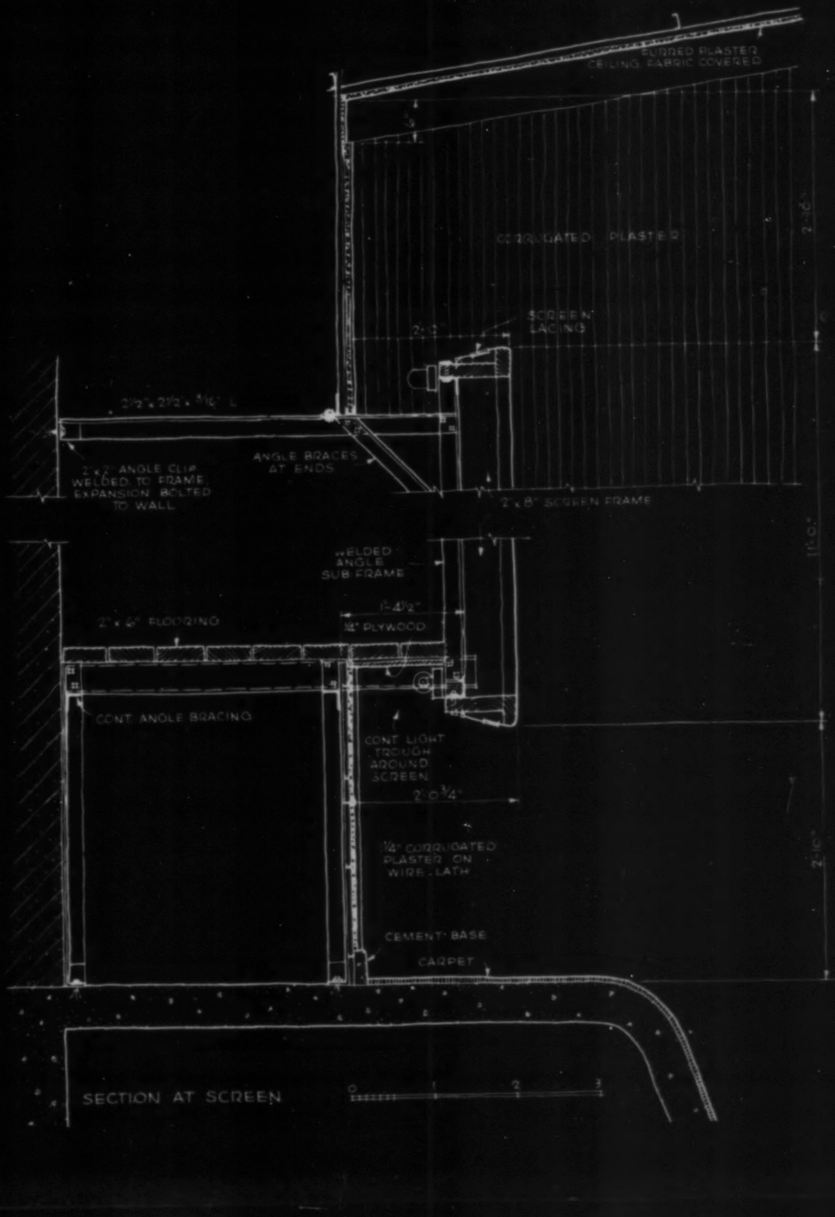

ANGLE FOR FURRING CONNECTIONS
BRACES AT ENDS
SCREEN ANGLE SUB FRAME
WELDED

ISOMETRIC

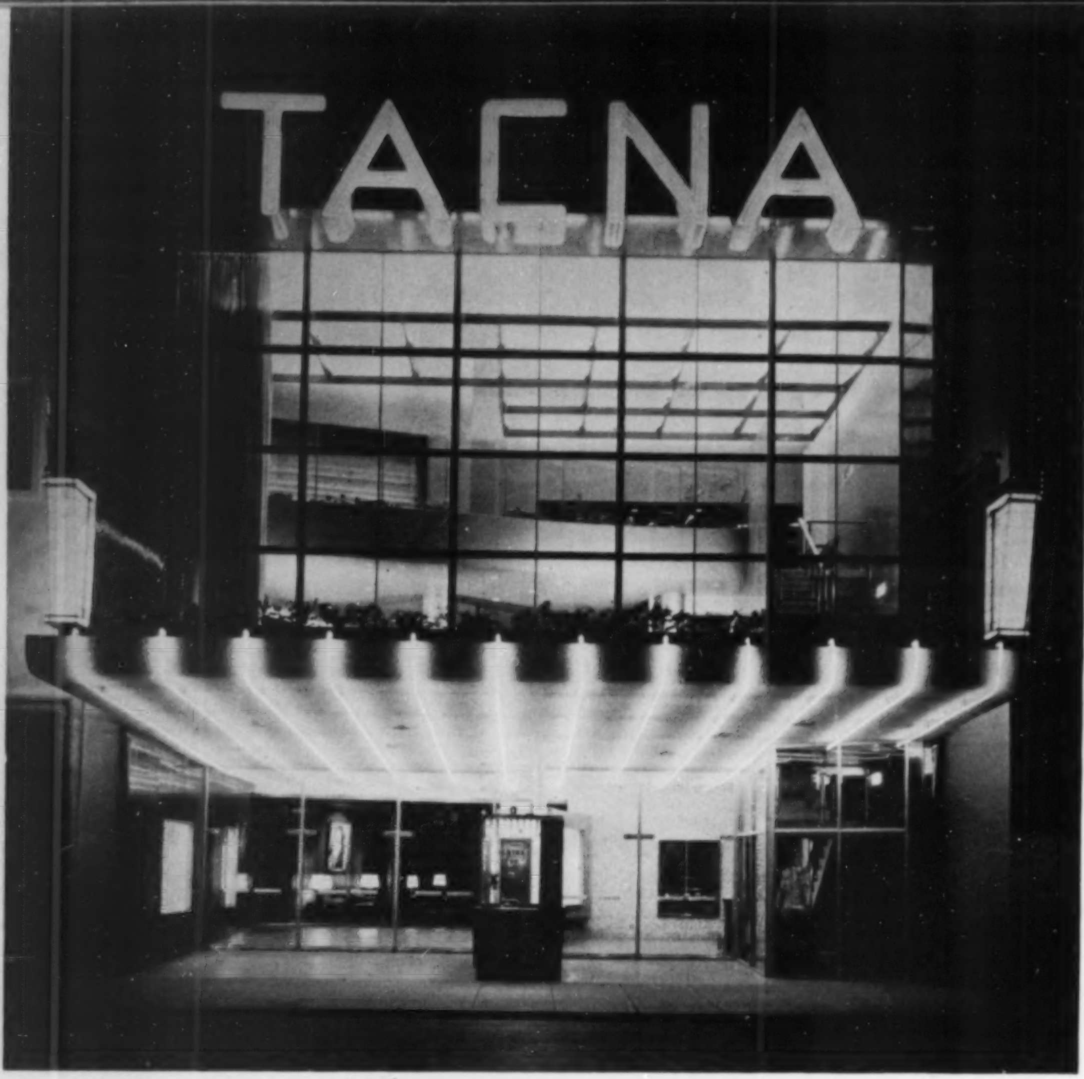
Universal International
NEWSREEL


9"
3'-5"
3'-5"
15'-2"
3'-5"
3'-5"
9"
2 1/2" x 2 1/2" x 3/16" Ls
1" [s 5.4
3'-2"
1'-2"
10"
2" x 6" PLANKING ON CHANNELS
UP

PLAN AT SCREEN


FURRED PLASTER CEILING FABRIC COVERED
CORRUGATED PLASTER
2'-10"
11'-0"
2'-10"
SCREEN LACING
2'-0"
2 1/2" x 2 1/2" x 5/16" L
2" x 2" ANGLE CLIP WELDED TO FRAME, EXPANSION BOLTED TO WALL
ANGLE BRACES AT ENDS
2" x 8" SCREEN FRAME
WELDED ANGLE SUB FRAME
1'-4 1/2"
1/2" PLYWOOD
2" x 6" FLOORING
CONT. ANGLE BRACING
CONT. LIGHT TROUGH AROUND SCREEN
2'-0 3/4"
1/4" CORRUGATED PLASTER ON WIRE LATH
CEMENT BASE
CARPET
0
1
2
3

SECTION AT SCREEN



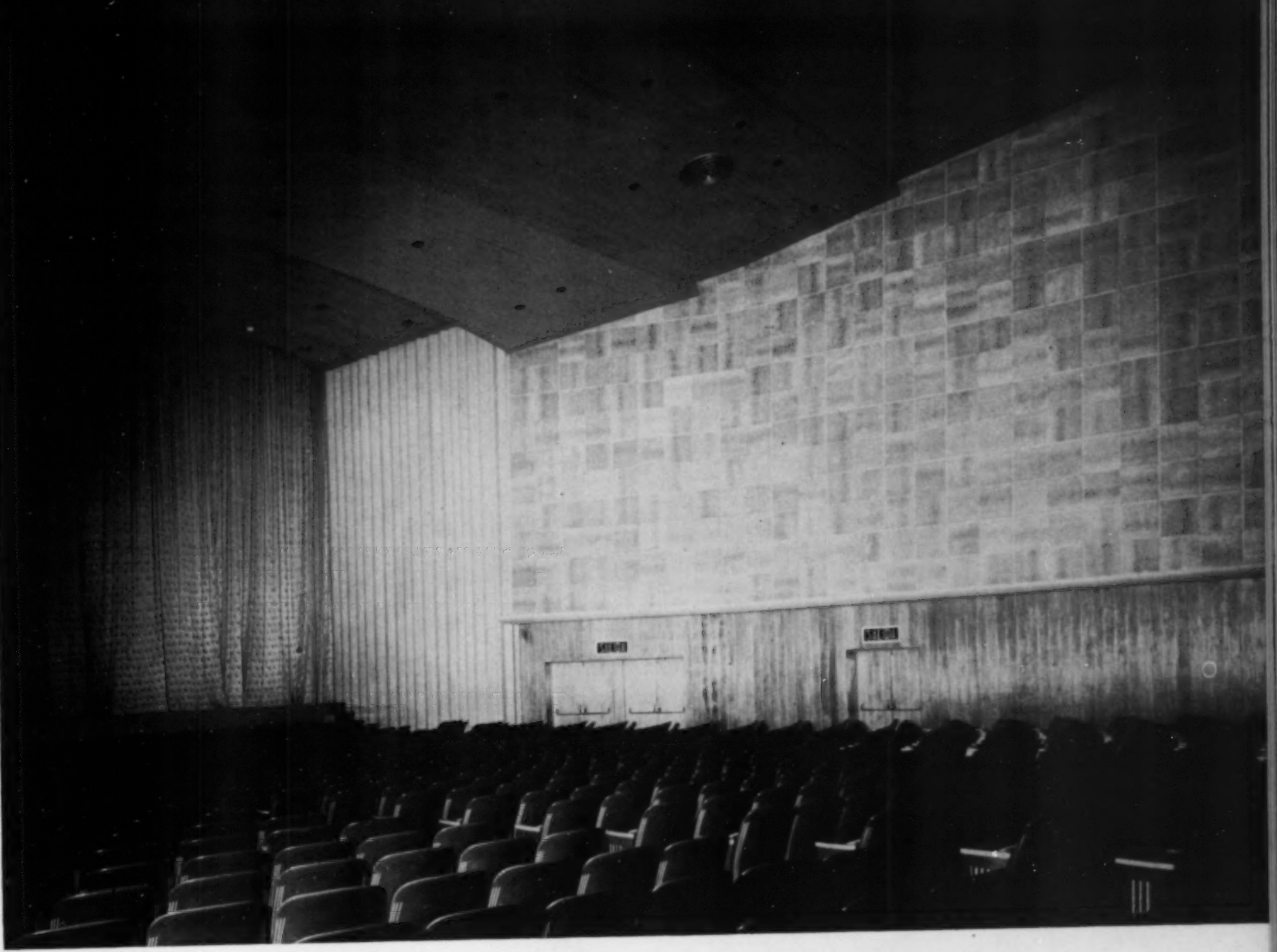
Tacna Theater, Lima

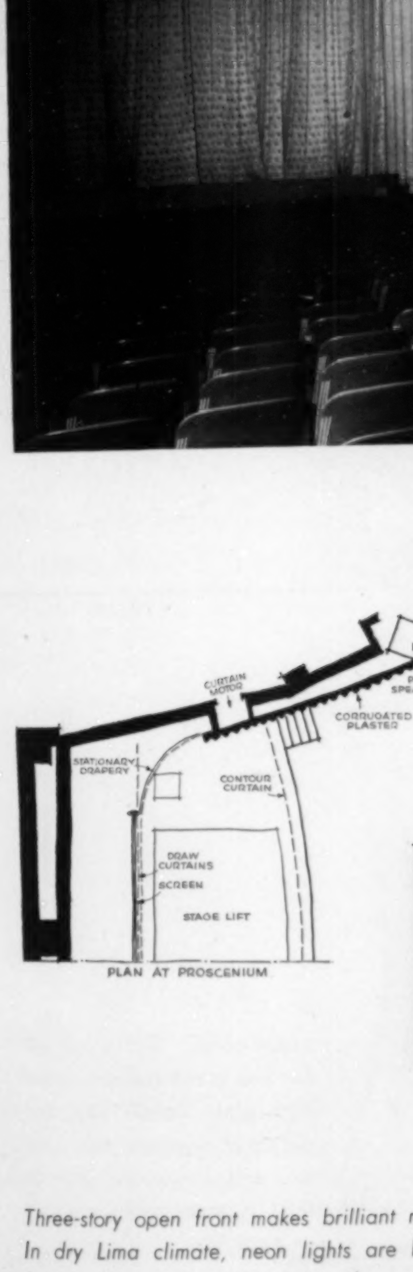
PROJECTING PARAMOUNT PICTURES IN PERU

Schlanger & Hoffberg, Architects *Reisner & Urbahn, Architects*

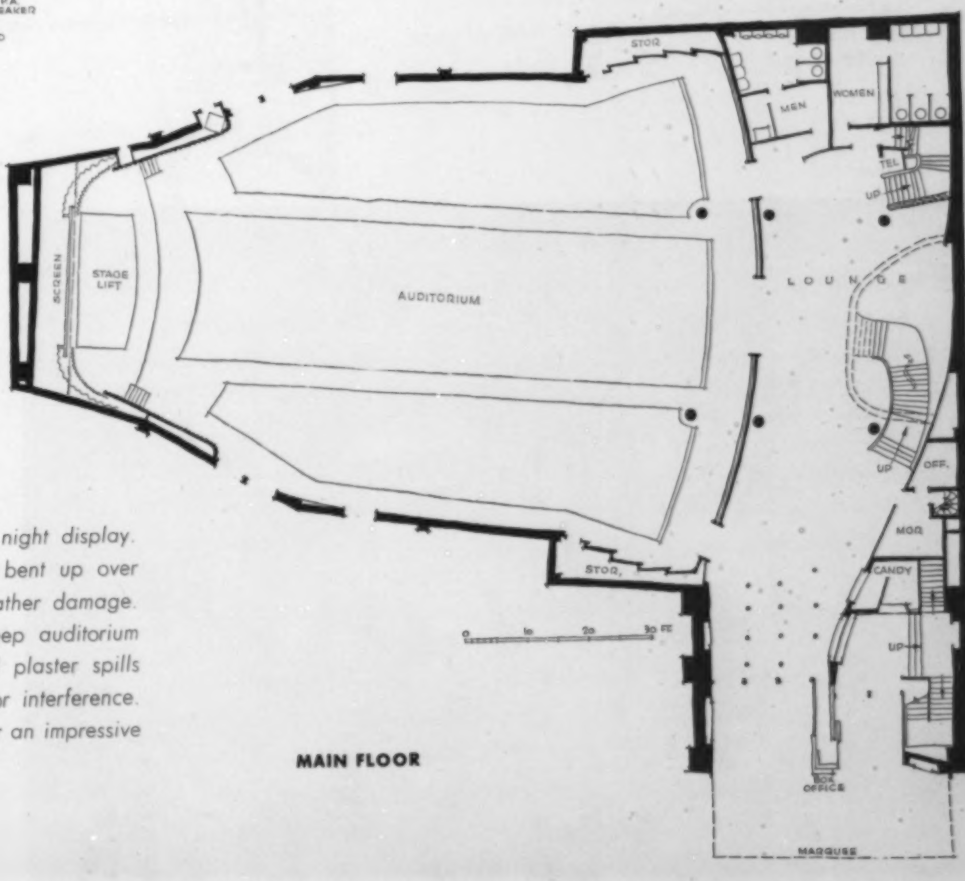
Not in New York and not in Hollywood but set against the Andes at Lima, Peru, is to be found the motion picture theater boasting the flattest balconies ever developed for designed seeing conditions in a theater, according to *Better Theaters*. Theater architect Schlanger (frequent Record contributor) achieved this by a combination of staggered seating and by the first use of a "reverse curve floor" in the *orchestra*, making the flat balconies possible. (See longitudinal section, page 95.) Meanwhile his associates, Reisner and Urbahn, helped contend with an export situation which meant that countless items had to be shipped preassembled. This included glass, mirrors, neon tubes pre-bent, stainless steel work, even millwork such as candy counters. Glass mosaic, liberally used in lobbies, was pasted in 2-ft. squares, and skillfully assembled by native workmen who never had handled glass mosaic before. In concrete, however, they had previous training and skill, could have produced curved stairs without the supporting posts in the design.

Seating 2000, the theater lacks features such as Continental seating, because Paramount International, working with the Peru owners, asked conformity to the New York building code.



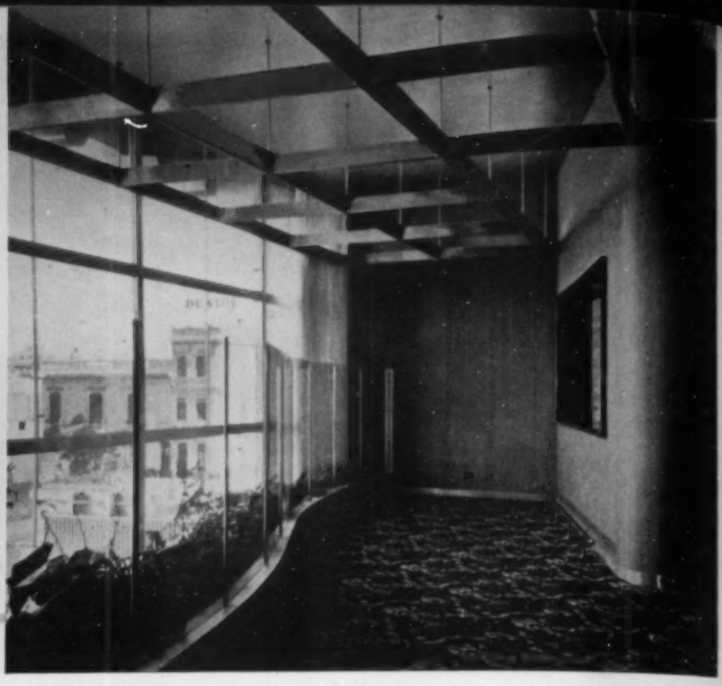

CURTAIN MOTOR
P.A. SPEAKER
CORRUGATED PLASTER
STATIONARY DRAPERY
CONTOUR CURTAIN
DRAW CURTAINS
SCREEN
STAGE LIFT

PLAN AT PROSCENIUM


STOR
MEN
WOMEN
TEL
UP
LOUNGE
AUDITORIUM
STAGE LIFT
SCREEN
UP
OFF.
MGR
CANDY
UP
STOR.
0
10
20
30 FT.
OFFICE
MARQUEE

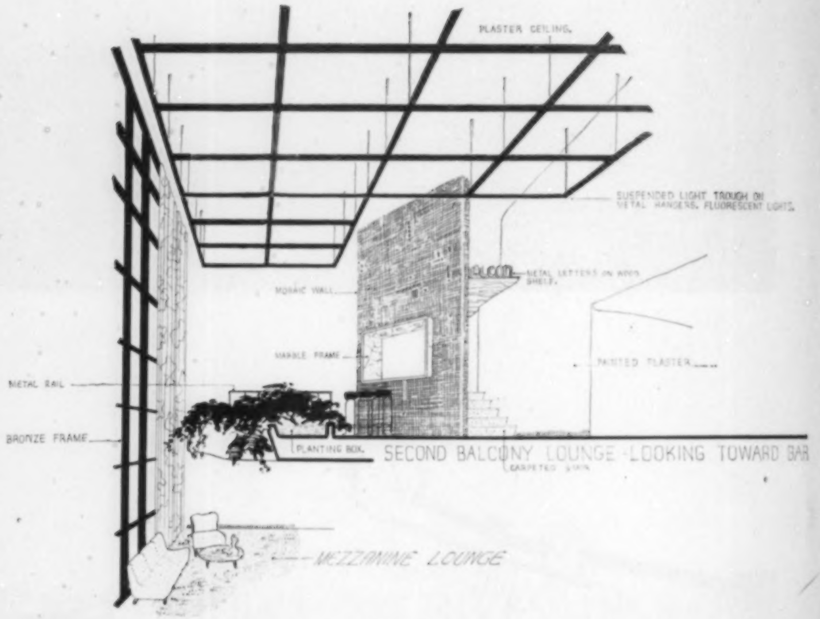
MAIN FLOOR

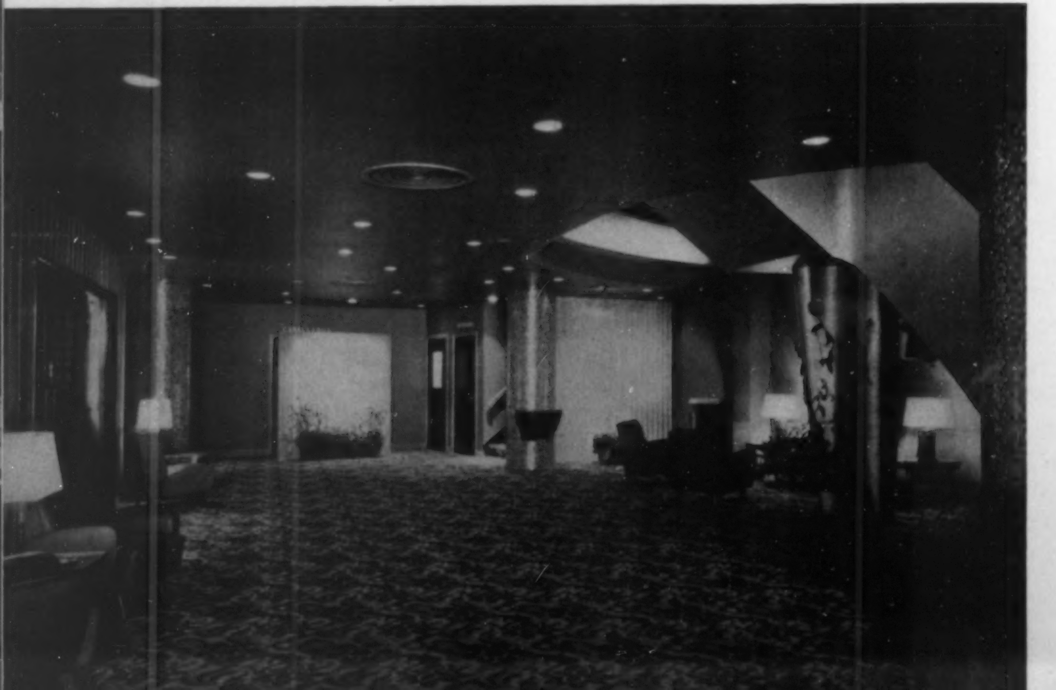
Three-story open front makes brilliant night display. In dry Lima climate, neon lights are bent up over fascia of marquee without risk of weather damage. Wood wainscot, acoustic tile wall keep auditorium looking simple, impressive; corrugated plaster spills screen light into room without glare or interference. Draw curtain was desired by clients for an impressive effect starting and ending shows



Lobbies and Lounges

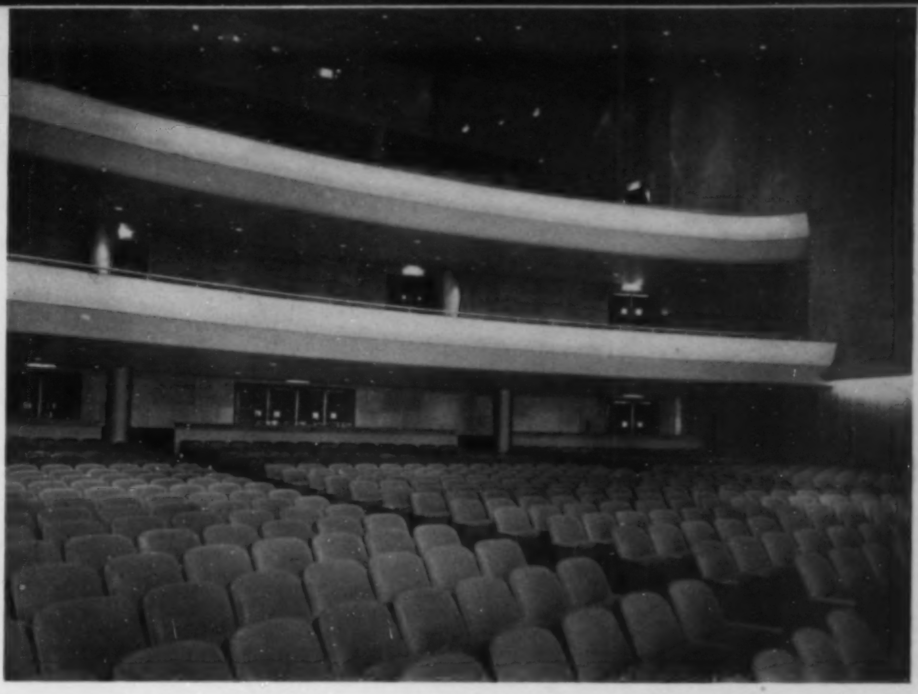
Every one of the three levels has a complete lounge development of its own, and for all of them the architects designed all equipment, including chairs, which were manufactured in the U. S. but upholstered in Peru. As indicated in the sketch, the second-balcony lounge carries the spectacular hung lighting grid containing fluorescent lights, and has its own planting boxes as a "suspended" interior feature. (Another set of planting boxes, set on the marquee, is directly outside of the mezzanine lounge)

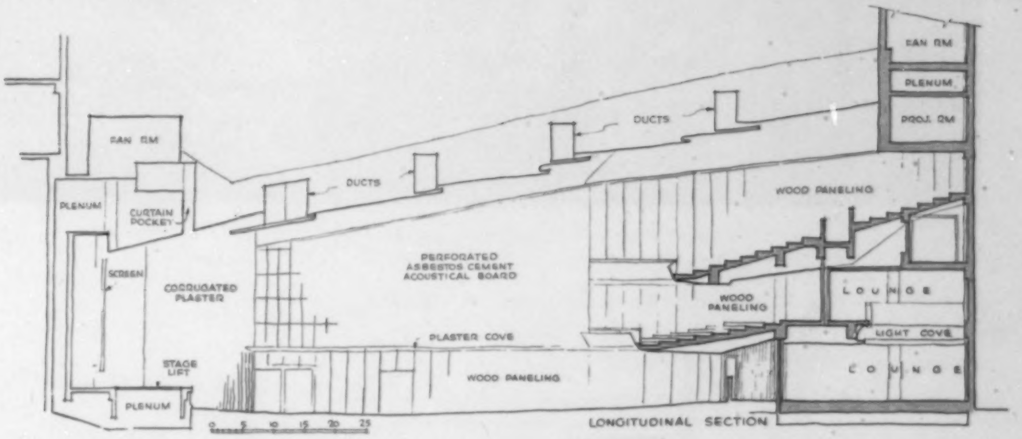

PLASTER CEILING.
SUSPENDED LIGHT TROUGH ON METAL HANGERS. FLUORESCENT LIGHTS.
MOSAIC WALL
METAL LETTERS ON WOOD SHELF.
MARBLE FRAME
PAINTED PLASTER
METAL RAIL
BRONZE FRAME
PLANTING BOX.
SECOND BALCONY LOUNGE - LOOKING TOWARD BAR
CARPETED STAIR
MEZZANINE LOUNGE



Main lounge (left) is set off by four great columns faced with glass mosaic (the first the local workmen had ever set, and set well). Stair at right is seen again overleaf on page 96

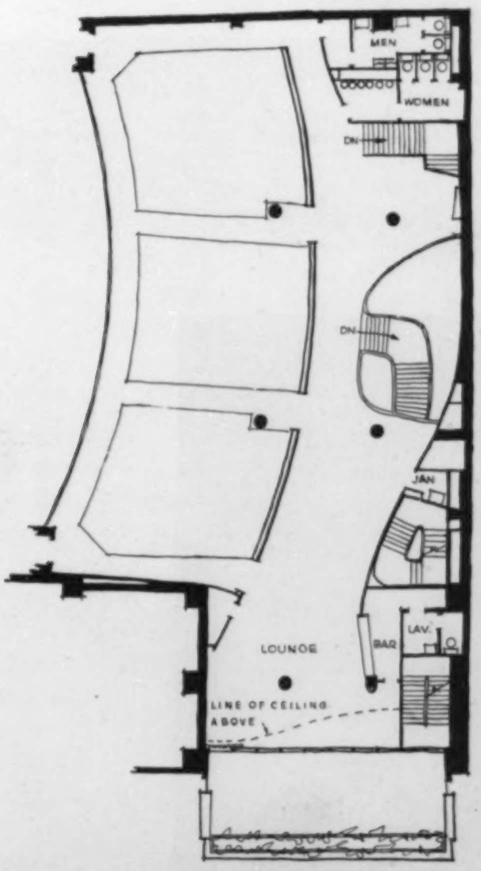
"Flattest balconies ever developed for designed seeing conditions in a theater" were made possible by staggered seating carefully calculated, and by reverse-curve flatness of orchestra floor in foreground. By lowering the ceiling such flat-balcony design diminishes cubage, reduces construction cost, improves acoustics, and helps the air conditioning, an important factor in a dry climate



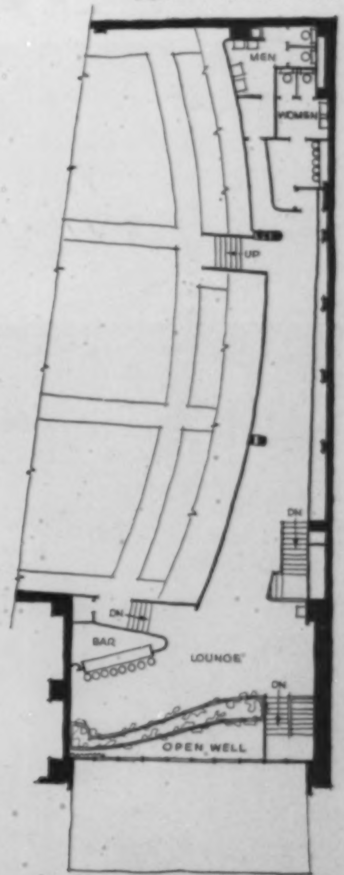

FAN RM
PLENUM
PROJ. RM
DUCTS
DUCTS
FAN RM
PLENUM
CURTAIN POCKET
SCREEN
CORRUGATED PLASTER
STAGE LIFT
PLENUM
PERFORATED ASBESTOS CEMENT ACOUSTICAL BOARD
WOOD PANELING
WOOD PANELING
LOUNGE
LIGHT COVE
PLASTER COVE
WOOD PANELING
LOUNGE
0 5 10 15 20 25

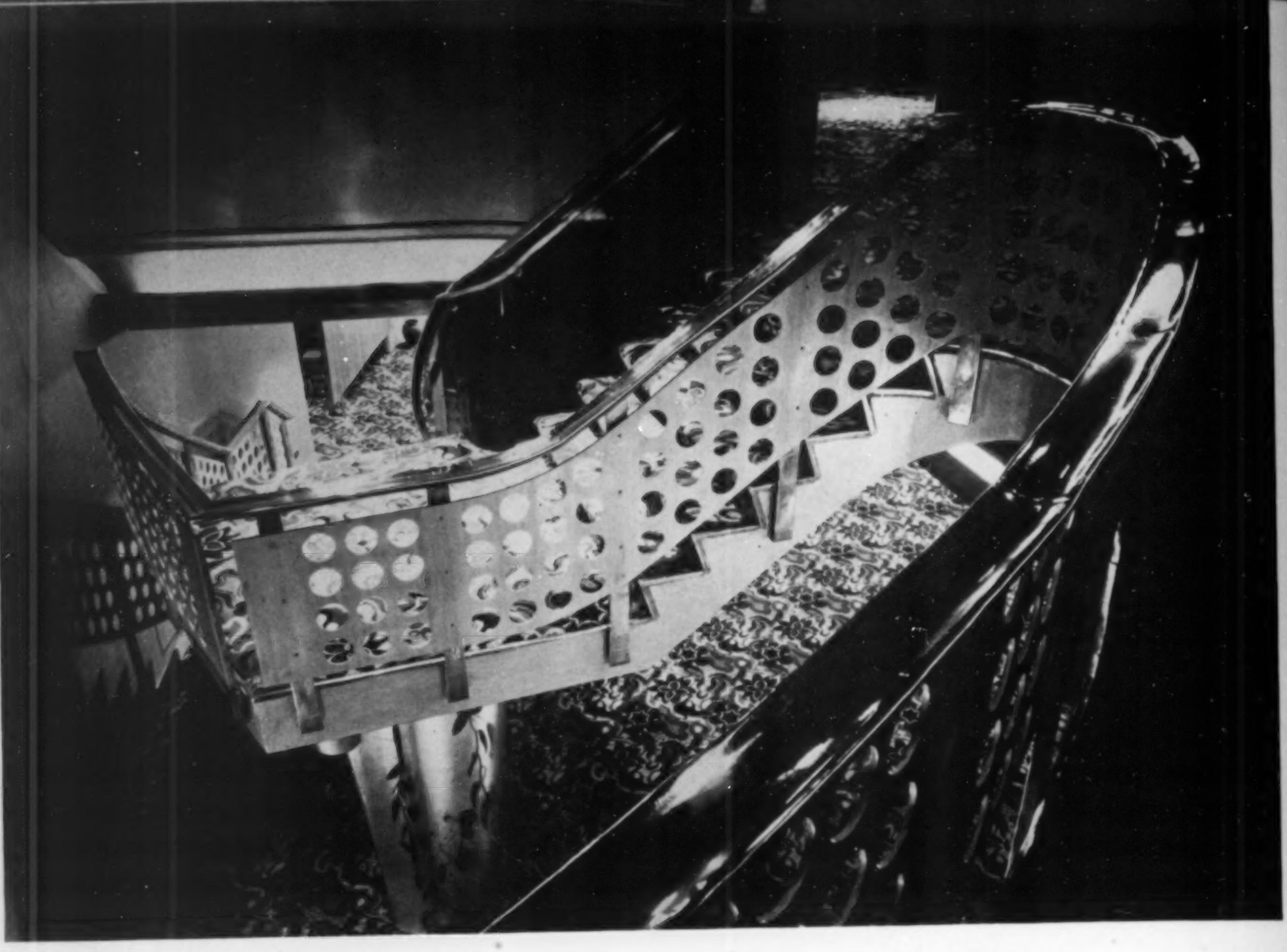
LONGITUDINAL SECTION

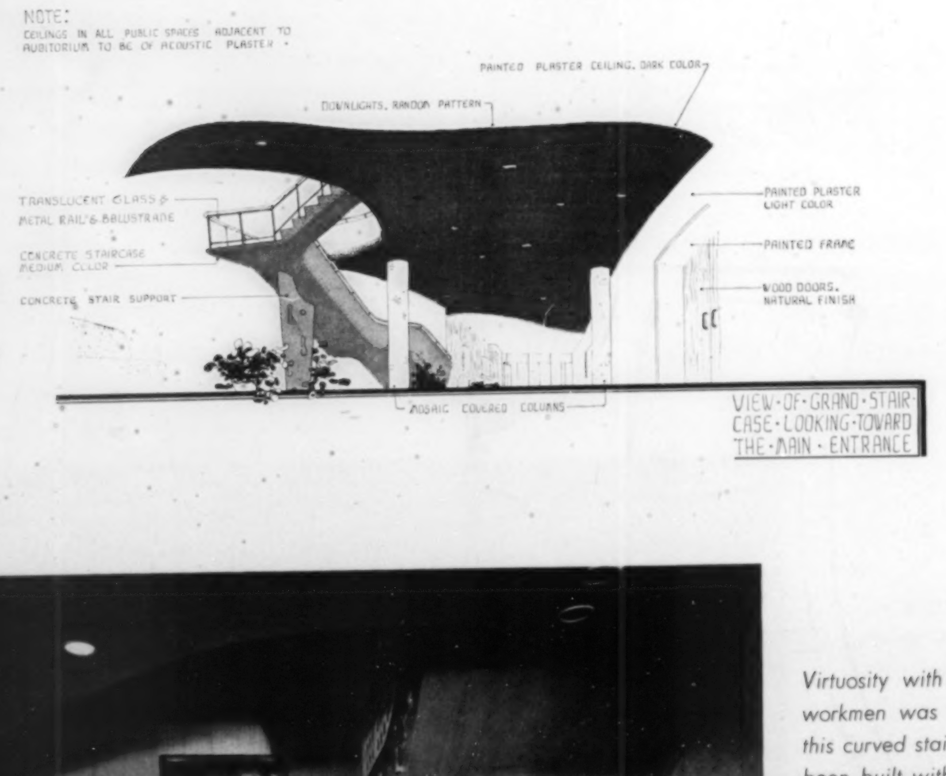
FIRST BALCONY PLAN


MEN
WOMEN
DN
DN
JAN
WOMEN
LAV.
BAR
LOUNGE
LINE OF CEILING ABOVE

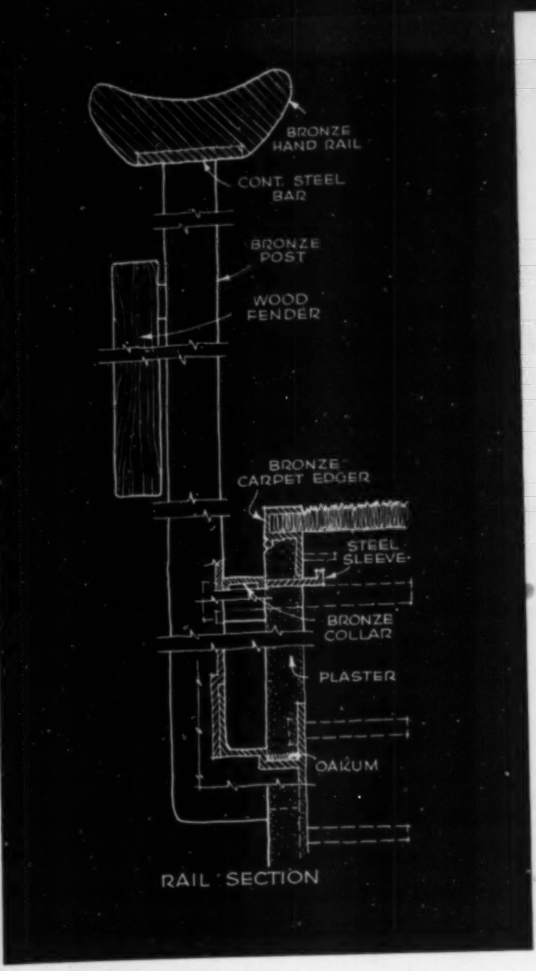
SECOND BALCONY PLAN

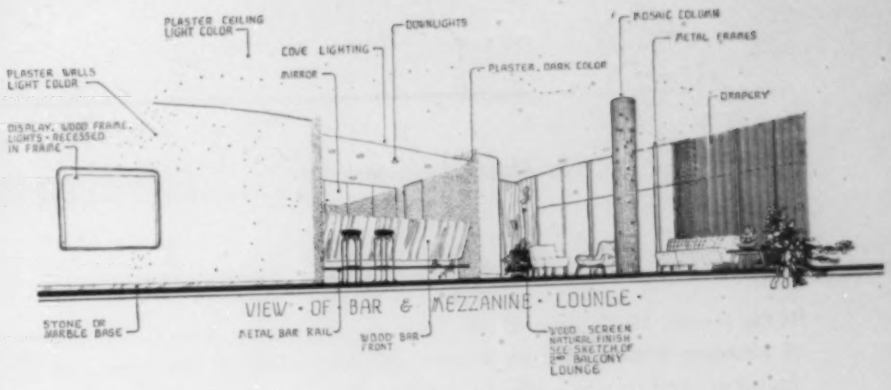

MEN
WOMEN
UP
DN
DN
BAR
LOUNGE
DN
OPEN WELL




NOTE:
CEILINGS IN ALL PUBLIC SPACES ADJACENT TO AUDITORIUM TO BE OF ACOUSTIC PLASTER ·
PAINTED PLASTER CEILING, DARK COLOR
DOWNLIGHTS, RANDOM PATTERN
TRANSLUCENT GLASS & METAL RAIL & BALUSTRANE
CONCRETE STAIRCASE MEDIUM COLOR
CONCRETE STAIR SUPPORT
PAINTED PLASTER LIGHT COLOR
PAINTED FRAME
WOOD DOORS, NATURAL FINISH
MOSAIC COVERED COLUMNS
VIEW · OF · GRAND · STAIRCASE · LOOKING · TOWARD THE · MAIN · ENTRANCE

Virtuosity with concrete of the Peruvian workmen was found to be so high that this curved stair to mezzanine could have been built without the supporting column designed by the architects. On the other hand it was impossible to carry out the original design, indicated in the sketch, for a stair rail of tempered glass. There was substituted the detail on next page

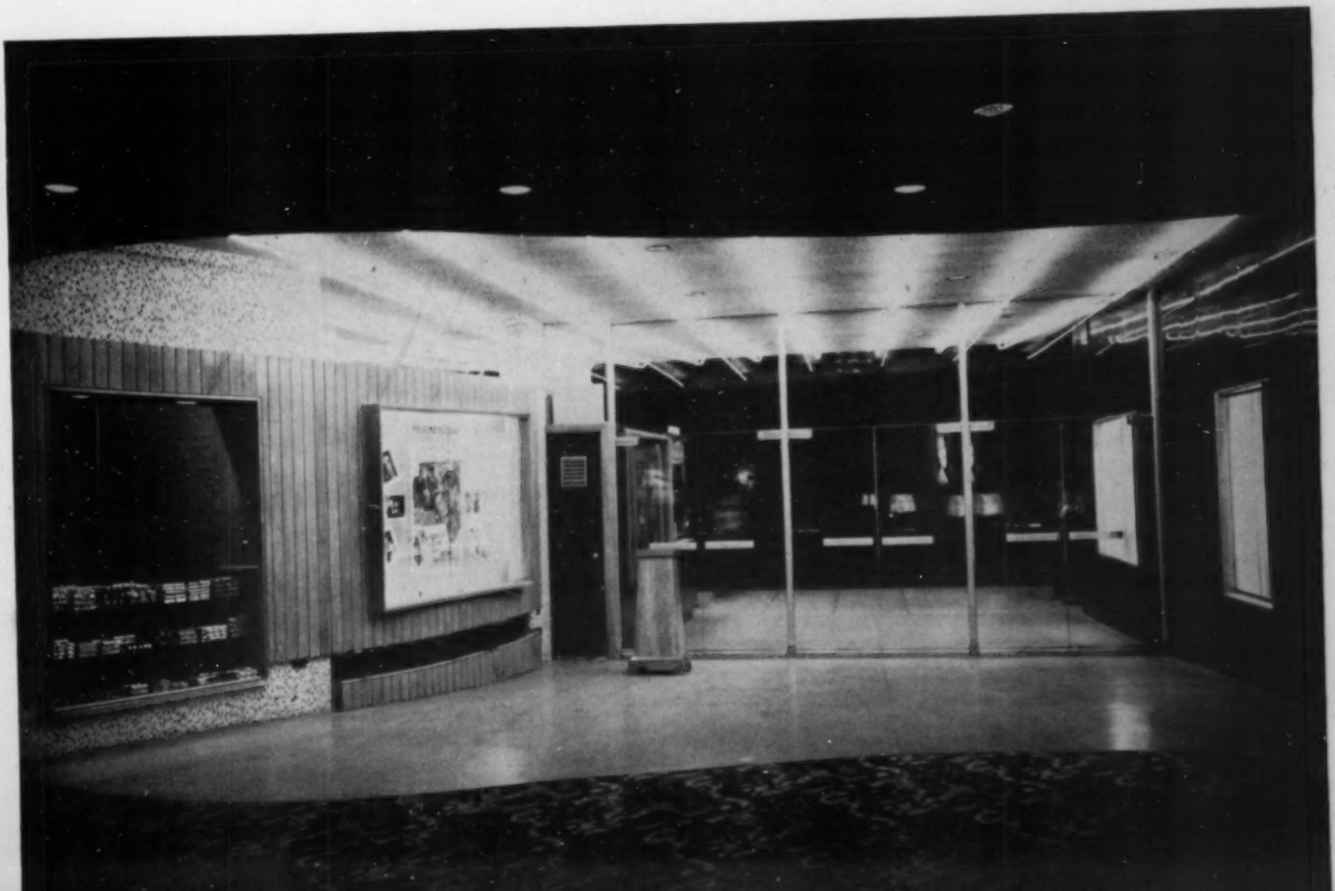

BRONZE HAND RAIL
CONT. STEEL BAR
BRONZE POST
WOOD FENDER
BRONZE CARPET EDGER
STEEL SLEEVE
BRONZE COLLAR
PLASTER
OAKUM
RAIL SECTION


PLASTER CEILING LIGHT COLOR
DOWNLIGHTS
MOSAIC COLUMN
METAL FRAMES
COVE LIGHTING
PLASTER WALLS LIGHT COLOR
MIRROR
PLASTER, DARK COLOR
DRAPERY
DISPLAY, WOOD FRAME, LIGHTS - RECESSED IN FRAME
VIEW · OF · BAR & MEZZANINE · LOUNGE ·
STONE OR MARBLE BASE
METAL BAR RAIL
WOOD BAR FRONT
WOOD SCREEN NATURAL FINISH SEE SKETCH OF 2nd BALCONY LOUNGE

Features such as the bronze handrail seen in the stair detail were made in Peru, but were cast instead of tubular. Sections were faithful to the architects' drawings though there was some difficulty in obtaining perfectly smooth finish

In the case of furniture, display cases, attraction boxes, and other similar equipment seen in the sketch of the mezzanine lounge (above) and of the main exit (below) all was shipped prefabricated from the United States

Although the total effect is obviously suited to a palace of amusement, with due glitter and dramatization, there is a more consistent and knowing hand displayed than in most theaters in this country. A new slogan might be, "go South!"



SCHOOL PLANNING

By Alonzo J. Harriman* **Continued from March issue**

IN the March, 1949, issue of ARCHITECTURAL RECORD Mr. Harriman examined the effect of planning schoolhouses by various accepted methods. He compared the effect of double-loaded or single-loaded corridors in combination with single-story or two-story construction. He also compared the complete structural cost (labor and materials only) of one-story versus two-story schools providing the same ten classrooms and necessary adjuncts.

He now continues the analysis by comparing the effect on square foot structural costs of using different types of wall and roof construction.

The warning which was given in connection with the first study is repeated herewith: viz, that the figures presented are for comparative purposes only. They indicate a method of studying the *effect on total costs* of different methods of planning and construction, but they are not to be taken as final costs.

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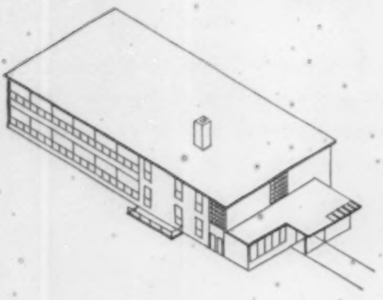
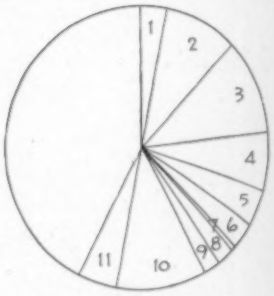
* *Figures compiled by Philip Goff, partner in Alonzo J. Harriman, Inc., Architects-Engineers.*

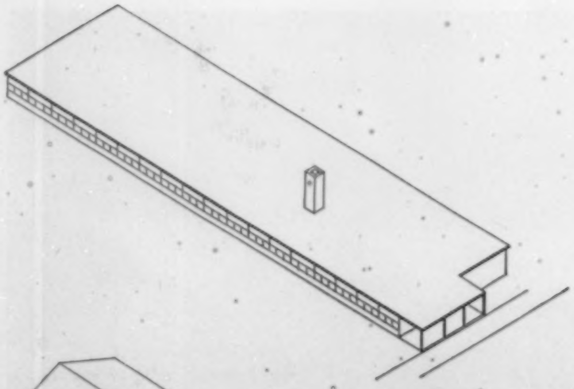
LEGEND

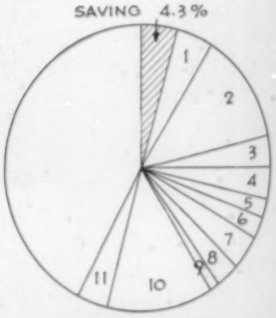
1. EXCAVATION
2. CONCRETE FOUNDATION
3. MASONRY
4. STRUCTURAL STEEL & MISC. IRON
5. MISCELLANEOUS CARPENTRY
6. BAR JOISTS
7. LATH & MESH OVER JOISTS
8. ROOFING & INSULATION
9. CERAMIC TILE
10. HEATING & VENTILATING
11. CONCRETE SLABS ON JOISTS





"A" TWO STORY
SEMI-FIREPROOF



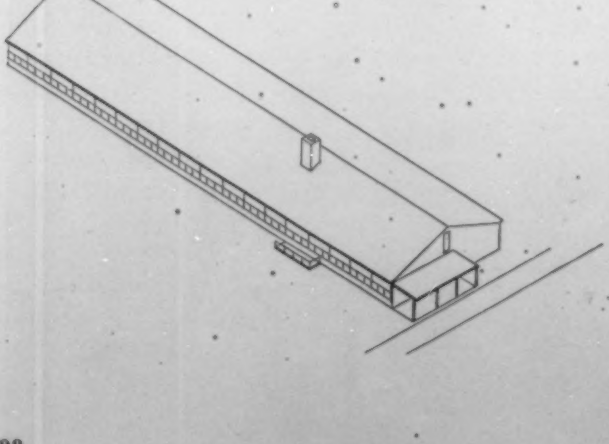


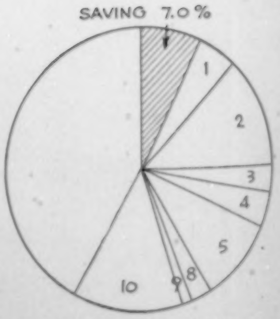
"B" ONE STORY
SEMI-FIREPROOF

SCHOOL COST COMPARISON

(Continued from March issue, pages 114 and 115)

"Pie charts" give graphic support to author's conclusions on relative cost of two-story semi-fireproof, one-story semi-fireproof, and one-story combustible-roof construction. The last-named shows a saving of 7 per cent, and the middle example shows a saving of 4.3 per cent, above the first example. The large unidentified segment at left in each pie chart represents factors remaining constant





"C" ONE STORY
COMBUSTIBLE ROOF

AND SCHOOL COSTS

GYMNASIUM ROOF TYPES

BASIS OF COST COMPARISON

In this analysis of gymnasium roof types, it is assumed that the floor is of wood construction, to which arches of the laminated timber types can be conveniently tied, and which absorbs the outward thrust on the foundation walls. However, the cost of the floor (being equal in all cases) is not included in the cost figures per square foot. To arrive at an equitable comparison of the effect of different roof types, the costs include one end-wall and two side-walls in all cases.

General Conditions: width of span 90 ft.; length 40 ft. Wall construction, wood post and girt frame covered on the exterior with corrugated asbestos backed with ½ in. of rigid insulation board. Surface exposed on interior. Window construction of wood.

Type "A" Roof

Construction: laminated timber arches at 4 ft. on centers, covered with 2-in. matched planking and steep-incline type of built-up roofing, topped with wide lapped mineral-surfaced strips.

Estimated cost per square foot of floor area, $3.46.

Note: Because of the continuous pitch of this type of frame, a clear headroom of 6 ft. is obtained at a point 2 ft. 6 in. inside of the bearing line of the arches. The resultant loss of floor space brings the cost of *usable* floor area per square foot up to $3.65.

Type "B" Roof

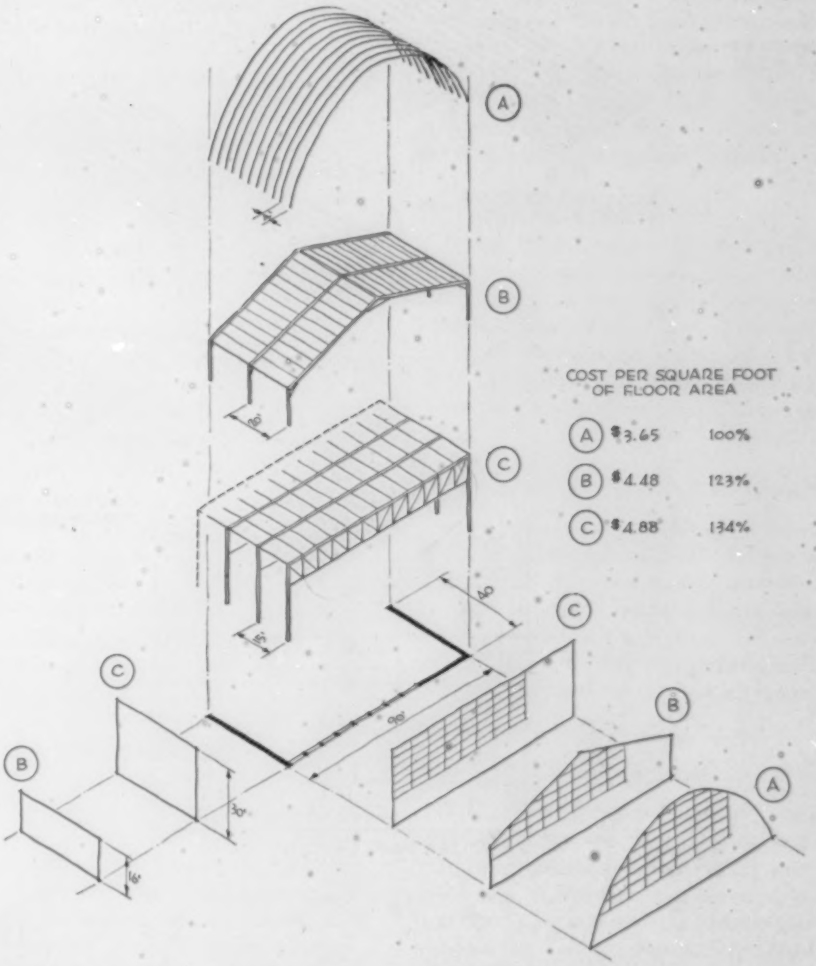
Construction: Rigid steel frames at 20 ft. on centers. Steel purlins with wood nailers; 2-in. matched plank roof deck; rigid insulation; covered with 15-year tar and gravel roofing. (15-year appears to involve no premium above 10-year.) Roof exposed on under side.

Estimated cost per square foot of floor area, $4.48.

Type "C" Roof

Construction: Steel flat Pratt trusses, supported on steel columns 15 ft. on centers; steel purlins with wood nailers; roof deck of 3-in. splined plank and rigid insulation covered with 15-year tar and gravel roofing. Roof exposed on under side.

Estimated cost per square foot of floor area, $4.88.



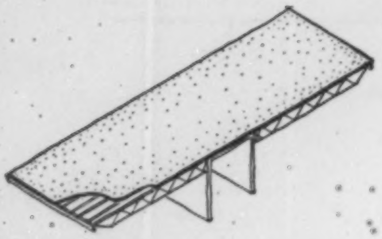
AUTHOR'S CONCLUSIONS ON GYMNASIUM ROOF TYPES

Analysis reveals that Type A is the least costly per square foot of floor area, even after deducting the 2 ft. 6 in. clearance necessary on each side, and using the higher figure of $3.65.

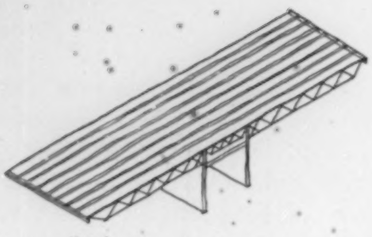
This saving arises from the fact that the roof is brought down to the foundation, and side-wall construction is eliminated. Type B is 23 per cent more expensive than Type A, and Type C is 34 per cent more expensive than Type A. There are, of course, certain places where the advantages of Types B and C or variations would readily warrant the additional cost.

Comparison of Types B and C indicates that Type B is less costly. It is possible to use a stock type of steel frame applicable to sundry types of building but particularly adaptable to gymnasium construction. This stock frame carries a saving in pound price of steel. There is another saving in Type B because the area of the enclosing wall is less. The pitched roof allows adequate height in the middle of the span for basketball though permitting a lower eaves height.

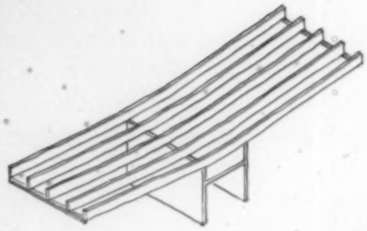
ROOF AND SIDE WALL TYPES



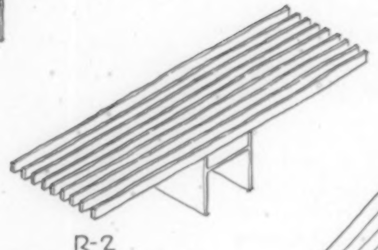
R-5
COST PER SQ. FT. OF FLOOR AREA $2.61



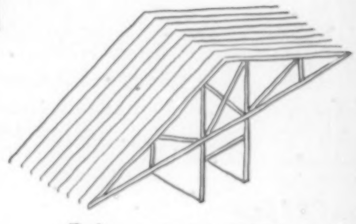
R-4
COST PER SQ. FT. OF FLOOR AREA $1.79



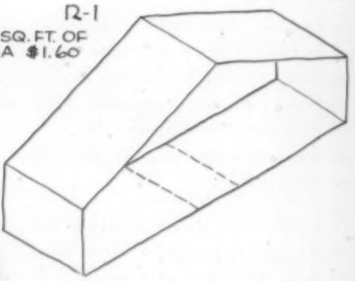
R-3
COST PER SQ. FT. OF FLOOR AREA $1.73



R-2
COST PER SQ. FT. OF FLOOR AREA $1.76



R-1
COST PER SQ. FT. OF FLOOR AREA $1.60

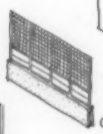


COST ANALYSIS OF ROOF TYPE

ROOF TYPE	WALL TYPE	COST *
R-1	W-1	$3.35
	W-2	3.25
	W-3	2.89
R-2	W-1	3.52
	W-2	3.42
	W-3	3.06
R-3	W-1	3.49
	W-2	3.39
	W-3	3.03
R-4	W-1	3.56
	W-2 & 3 NOT USED WITH R-4	
R-5	W-1	4.34
	W-2 & 3 NOT USED WITH R-5	

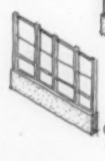
* COST PER SQ. FT. OF FLOOR AREA

W-1



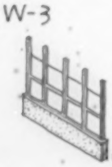
COST PER SQ. FT. OF WALL AREA $4.50

W-2



COST PER SQ. FT. OF WALL AREA $4.21

W-3



COST PER SQ. FT. OF WALL AREA $3.28

AUTHOR'S CONCLUSIONS CONCERNING ROOF AND SIDEWALL TYPES

Comparison of wall types W1, W2, and W3 reveals that there is a greater percentage of structural saving in substituting single glazing for double glazing in wood sash than there is in substituting double-glazed wood sash for a combination of steel-framed glass block and steel sash. (Heating costs are not considered in this comparison.)

The large saving shown by W3 over the other two types is due to the use of a stock "storm sash" or a sash similar to "storm sash," with a stock type of rail; and attaching these to a framing member either by rebating the structural member or applying a stop directly to it.*

The analysis of wood-frame roofs R1, R2, and R3 indicates that R1 is the cheapest of them all. It also indicates that a truss roof designed to use short lengths of native lumber, and capable of being jig-assembled and nailed or bolted, can be cheaper in our area than roof construction which is based on the larger sticks of West Coast lumber at higher prices per board foot.

Roofs R1 and R2 have a ceiling applied underneath the

Editor's Note: Millwork as a cost factor may show considerable variation according to locality. Using the same analytical methods as Mr. Harriman, architects in other locations can easily establish dependable conclusions for their own areas.

BASIS OF COST COMPARISON

The floor area used in establishing structural costs per square foot is based on a 6-ft. section, or bay, cut transversely through a typical part of the building so as to include two classrooms, each with a 22-ft. span, and sharing an 8-ft. corridor.

The analysis ignores foundation costs (which vary considerably from job to job) and the cost of the ground floor (which would show no variation from type to type). The starting point is therefore the top level of the ground floor, and costs include side-wall and roof construction, and corridor walls.

It is assumed that in these one-story buildings the costs of heating, plumbing and electric installations within the unit considered are the same in non-fireproof types and semi-fireproof types.

Side-Wall Types

Side Wall Type W1 (Steel frame sash and glass block)

Wall below window of concrete.

Construction above concrete wall is of structural steel acting as structural support for roof and as frame for directional glass block and for metal sash below glass block panels.

Side-Wall Type W2 (Wood frame, wood sash; double glazed)

Wall below window of concrete.

Construction above concrete wall is wood structural frame supporting the roof. Window construction is of double, wood, fixed sash above single-glazed wood hopper vents. Glass is clear window glass.

The module of 4 ft. has been used in the side-wall unit to conform to the spacing of the framing members of the roof. It also lends itself to the bond of masonry or the economical length of wood or prefabricated wall covering.

Side-Wall Type W3 (Wood frame, wood sash, single glazed)

Wall below window of concrete.

Construction above concrete wall is wood structural frame supporting the roof. Window construction of single, wood, fixed sash above single-glazed wood hopper vents. Glass is clear window glass.

The module of 4 ft. has been used in the side-wall units to conform to the spacing of framing members. This in turn lends itself to the bond of masonry or the economical length of wood or prefabricated wall covering.

Roof Types

(In all cases the corridor walls are considered as bearing partitions of wood stud construction covered with gypsum board painted. Corridor ceiling of wood joist strapped and covered with gypsum board painted.)

Roof Type R1 (non-fireproof)

Roof construction: pitched type, light wood trusses spaced 24 in. on centers, made of native lumber and having bolted and nailed connections without the use of connectors. Ceiling strapped directly to bottom chord of truss and covered with gypsum board painted. Ceiling insulated with 4-in. thick mineral wool. Roof surface boarded with matched wood sheathing and covered with asphalt shingles.

Roof Type R2 (non-fireproof)

Roof construction: flat-type, wood joists, spaced 24 in. on centers, using Douglas Fir lumber; matched wood sheathing; rigid insulation covered with 20-year tar-and-gravel roofing. Ceiling strapped directly to bottom of joist and covered with gypsum board painted.

Roof Type R3 (non-fireproof)

Roof construction: dihedral type, wood mill-frame construction with Douglas Fir timbers, spaced 48 in. on centers, with 2-in. matched plank roof. Structure exposed on ceiling side and painted. Roof insulated with rigid insulation covered with 20-year tar-and-gravel roofing.

Roof Type R4 (non-fireproof, steel joist)

Roof construction: flat-type steel open-web joists, spaced 24 in. on centers with 2 by 4 in. wood nailers attached, to which sheathing is nailed. Rigid insulation covered with 20-year tar and gravel roofing. Ceiling strapped directly to bottom of joists covered with gypsum board.

Roof Type R5 (semi-fireproof)

Roof construction: flat-type steel open-web joists carrying 2½-in. concrete slab; lath-and-plaster ceiling over classrooms. Corridor: reinforced concrete flat slab exposed on ceiling side and painted. Ceiling areas painted. Roof insulated with rigid insulation covered with 20-year tar and gravel roofing.

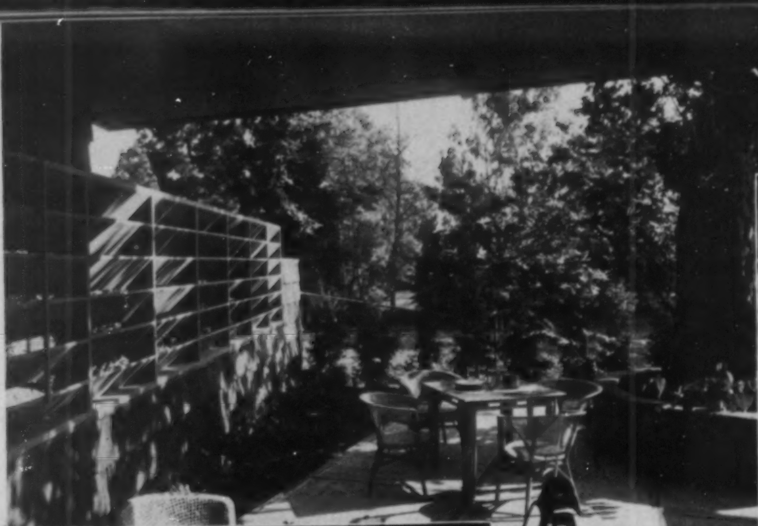
Corridor walls: load-bearing masonry block painted.

joists. R1 with a finished ceiling is cheaper than R3 with exposed plank ceiling. The variation of a mere 1 per cent between R2 and R3 warrants no conclusion as to their relative cost values.

Figures on R4 indicate that for a 22-ft. classroom span the use of steel-joist framing is more expensive than either a simple trussed roof or a wood timber roof. It has ceiling tile or plaster board underneath. However, if this ceiling tile or plaster board is omitted and the bar joists are left exposed, the use of steel joists is slightly less expensive than types R2 or R3. The saving per square foot of ceiling omitted is about 9 cents a square foot pushing the net cost of R4 with W1 down to $3.45.

Roof R5 is a semi-fireproof construction with a concrete slab on top. This reflects about a 25 per cent increase over the cheapest wood construction, if the same type of wall construction is used.

Walls W2 and W3 were not combined with roofs R4 or R5 because it was thought that the unity of the steel should be preserved. However, by adopting a mongrel type using wall W3 and roof R4 to cut our costs we might arrive at one of our cheapest types of construction.



HOUSES

ARCHITECTURAL RECORD'S

BUILDING TYPES STUDY NO. 148

By Arthur McK. Stires, **Contributing Editor, ARCHITECTURAL RECORD**

HOME LIFE AND HOUSE ARCHITECTURE

If this piece were being written by a practicing architect, it would be no more than proper to begin with an apology for the inference that the author has some special or more exact knowledge in a field which, to varying degrees, is a major consideration in all residential work, a problem common to every architect concerned with house design. But these observations are being presented from the outside, so to speak, and against a background of many years spent in a kind of No-Man's-Land half-way between the architect and the client, where both can be heard.

Inevitably, to one in such a position, there emerges gradually a sort of composite client and composite architect, the first imbued with all the hopes and fears and inarticulate longings of his kind, the second invested with power to untangle and simplify and make order of it all, and finally to build. (In evolving these composites one naturally selects only the better materials.) This article, which will concern itself with the interaction between home life and the architecture of the home, is addressed to the architect, somewhat on the client's behalf — but also with the hope that the client may see it and gain a little something in new perspectives and objectives, which might benefit the architect and the end result.

In the first place, the antiquity of the relationship between home life and house design should not, we think, imply that it is therefore an old story, completely assimilated, and unimportant as a subject for discussion. Not only does time work changes in the manner of living, which need to be appraised, but it is also possible for a profession to grow beyond its former boundaries, availing itself of whatever is appropriate to it in the expansion of other arts and sciences. Architecture would seem to have a special opportunity and responsibility in this respect, and as it flows beyond its old borders its relationship to old problems inevitably changes. Already the vanguard of contemporary house architects is striving to create designs which go beyond the mere satisfying of strictly functional objectives; which seem, in fact, to stem from a conviction that whereas architecture must and should be influenced by the form and content of the family life, yet architecture can and should exert its own subtle influence on the development and serenity of that life.

Satisfaction of the owner's living requirements is obviously one of the elementary (even if pre-Sullivan) objectives of house planning. The chunky little Cape Cod cottage must have made quite an adequate economical home for a man of the sea; the down-East farmer's continuous train of buildings, beginning with the house and ending with barn, was a practical solution for a man with a practical distaste for shoveling paths in winter snows; and the perennial Southern gentleman, addicted to welcoming a score or so of guests, seems to fit naturally enough in a house which is almost extravagantly hospitable-looking.

Nonetheless, we have a feeling that except for the classic examples these typical American solutions of the house problem are not often as apt and skillful in the details of planning as they are in the contours of their moldings. In the myriads of doors (often opening inextricably into each other), in the wasteful or hit-or-miss circulation, in the murderous stairways and skull-cracking obstructions there is at least some evidence to support a contention that the builder, according to his skill, satisfied the major needs of the owner, and the owner then adapted himself to ineptitudes of others.

In more recent times, the powerful influence of home life on house architecture is nicely illustrated in the metamorphosis of the plan in so-called "traditional" houses. The client was ready, perhaps eager, to preserve the externalisms of the old buildings — even to copy the furniture — but he required the architect to reorganize the plan to conform to his modern living needs, literally a marriage of convenience; but also reassuring evidence that the force of the great alliance between life and architecture cannot ever be circumvented or suppressed.

It seems to us, then, that in old architecture as in the more recent adaptations there was something good and something not so good. There was freedom, beauty and appropriateness in the design of many of the early houses but there were not enough architects to go around and the details of planning which might have made the house an easier place in which to live often went unresolved. In the latter-day reincarnations of this work, the client has had the advantage of the architect's professional skills; but the architect has not been free to develop his design as an entity, unprejudiced by antique façades.

It seems possible, therefore, that in our contemporary modern house design, combining the services of a fairly numerous and available profession with a return to the freedom, inventiveness and reasonableness of earlier times, the client may be getting the best break he has had for some years. If he does not always recognize that fact at once, that is not remarkable. In the modern approach, which sets its design objectives by reference to

For identification of photos opposite see following pages individual family needs, preferences and even aspirations, the interaction between home "living" and the architecture of the house has plenty of room to work; and the resulting house is certainly different, as compared to popular residential types of only a decade or so ago. To the man accustomed to buying his house and furniture by simple reference to the "authenticity" of their "reproduction," it is difficult to start thinking solely in terms of himself, and his family, and how he wants to live. Difficult, and a little alarming; but with understanding, it comes.

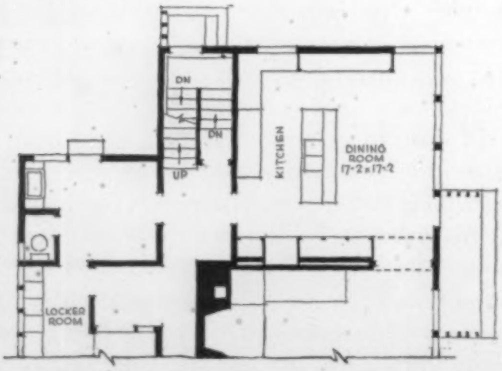
In a degree, many of us have been conditioned to certain prominent aspects of the modern house by personal experience with apartment living. People who have never had a cellar or an attic, who have had to discard worn-out or useless possessions for lack of storage space in which to keep them, usually come to a correct evaluation of this enforced weeding-out process and prefer to continue it. The economical — often multiple — use of space in an apartment has also been useful as preparatory education.

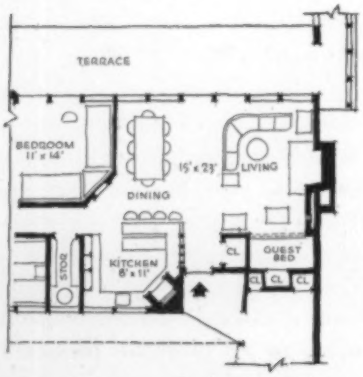
Perhaps, as a matter of fact, it is only just to give to our friend the client a little of the credit for the happy turn of events in the architecture of the house. He has demonstrated a desire to live a simpler, more rational life in his home; he has looked to his home for an antidote to the tensions and frictions of modern life; he has developed a fondness for the outward look, and found serenity in broad vistas of sky and earth. He, too, has changed a lot since grandfather's day.

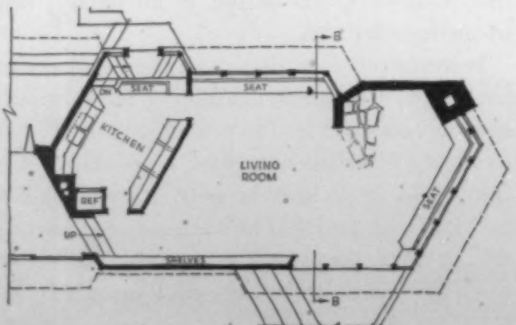
Yet, for all these healthy tendencies, this same man is today a particularly poor bet to make any progress — unaided — towards the realization of a house well-designed for him. More than ever he needs professional help. The architecture of today which takes into account the very great social and economic changes of recent years, which takes into account the biggest pattern and the least pattern of family life, and which is striving — as we shall presently see — to go even beyond functional, utilitarian objectives, this architecture can in no way be successfully attempted by the untrained layman. Therein lies a problem, unsolved but at least recognized by the profession.

Emerging out of all forces which have worked upon it, the modern house constitutes at once a more nearly common architecture — in that the small, economical house can offer comfort, convenience and even esthetic pleasure comparable to that of the large, expensive house — and at the same time a more fluently individual architecture, in that it adjusts itself more easily

Revival of the kitchen as a center of the home—recalling its ancient and honorable estate—is one rewarding by-product of the "servant problem." Today it has progressed not very much beyond the elementary matters of convenience and utility; but, depending on the individual family's way of living, it seems to offer rare possibilities of development. The plans above are an indication of how this room, used in combination with other rooms, has been rescued from obscurity and returned to the use and enjoyment of the family







Top left
Harwell Harris, architect
Complete plans ARCHITECTURAL RECORD Feb. 1948, page 107

Top right
Wurdeman & Beckett, architects
Complete plans ARCHITECTURAL RECORD Sept. 1948, page 111

Bottom left
Schweikher and Elting, architects
Complete plans ARCHITECTURAL RECORD July 1947, page 86

to the sometimes trivial, sometimes important differences that inevitably exist between different families' ways of living. In the first we find room to hope for some kind of broad development, within the profession, which will make well-designed houses available to every income group; but our primary concern here is with the second part — the sensitive response of house architecture to the individual's home life, and the maximum development of that response.

Nor should we overlook here the converse effect — the influence of good architecture on the aspirations of the individual. As people are familiarized, through publications, with sound contemporary design expressive of a greater freedom, individuality, informality and sincerity in home life, they are better able and more inclined to orient their own thinking along similar lines. Inspired by example, they tend to project for themselves a pattern of living which in turn can take form as a good contemporary house.

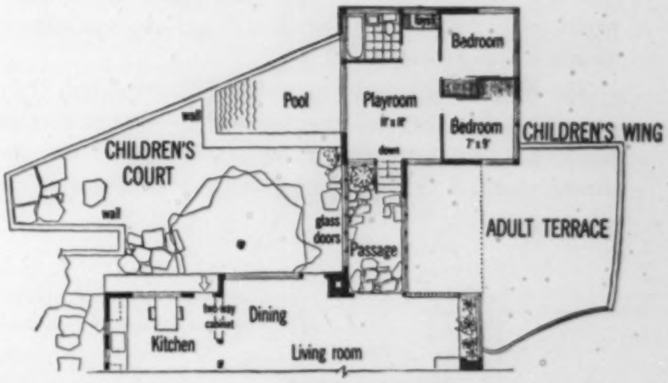
The expressed aims of some of the distinguished thinkers in the architectural profession might seem a little visionary if it were not possible to look back and see what remarkable changes have taken place, not only in the house as a whole, but in every component part of its plan.

Think, first, of the inviolate pattern of the plan as we have known it — the sitting-room to the right, the dining-room to the left, the kitchen beyond, each with its familiar air of being what it always was and always would be, forever. And upstairs, like a hayloft, the bedrooms. That spelled house; nothing different occurred to us. So deeply is that rigid pattern seared on our consciousness that people who shut their eyes and make their minds a blank are apt to find themselves following it, even today.

But many of us — perhaps more than is generally admitted — have been overtaken by a great change. Persuaded by the force of such inexorable circumstances as the dearth of domestic help, and partly by the logic of the contemporary architectural approach, we have become willing accessories to some notable changes in house planning. For example: since we do our own cooking now, and guests are a commonplace in the kitchen, why not bring the kitchen out of its ancient obscurity and make it a room — or part of a room — with social standing equal to other rooms?

No longer the exclusive domain of the servants, this most attractive complex of sounds, sights and aromas is once again returned to the family. In earlier times it was always the core of family life, the center of the

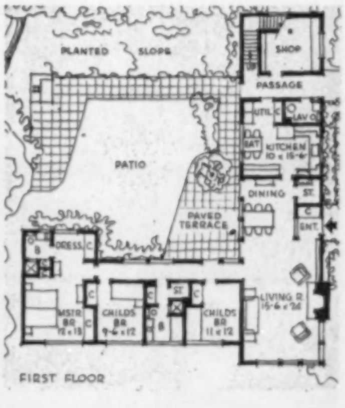
Segregation applies to children and adults alike, growing out of an understanding of individual needs and the potential functions of various parts of the house. In Stubbins's plan, right, the children's end of the house has been developed to give them space for their work and play, with an adequate sound barrier between their rooms and the adults' living areas. But in cases where close supervision seems necessary, an arrangement like that of Howard Moise's might be considered essential. Even out of doors, segregation can yield results: for example, note that in Thiry's plan, the terraces are separate but the children's can be under constant observation from the living room, kitchen or adults' terrace

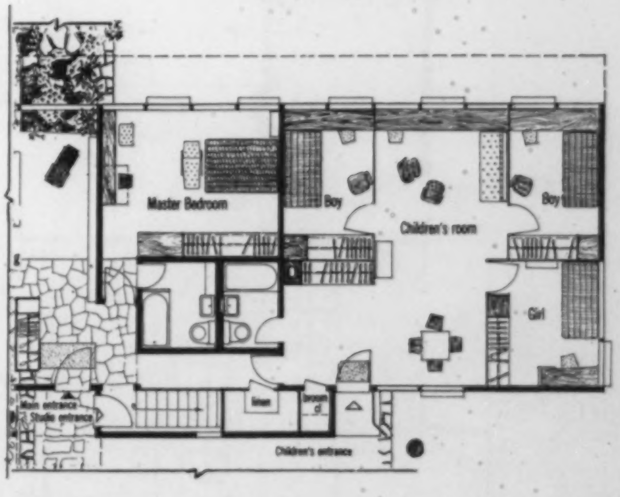

Bedroom
Pool
Playroom
11'x 11'
Bedroom
7'x 9'
CHILDREN'S WING
wall
CHILDREN'S COURT
wall
down
glass doors
Passage
ADULT TERRACE
bed-way cabinet
Dining
Kitchen
Living room

Top right
Paul Thiry, architect
Complete plans *House & Garden* Nov. 1947, page 198

Bottom left
Howard Moise, architect
Complete plans ARCHITECTURAL RECORD Nov. 1947, page 107

Bottom right
Hugh Stubbins, architect
Complete plans ARCHITECTURAL RECORD March 1948, page 91


PLANTED SLOPE
SHOP
PASSAGE
UTIL
LAV
BATH
KITCHEN 10×15-6
PATIO
DINING
ST
PAVED TERRACE
ENT
DRESS
C
MSTR BR 15×18
CHILDS BR 9-6×12
CHILDS BR 11×12
LIVING R 15-6×24
FIRST FLOOR


Master Bedroom
Boy
Children's room
Boy
Girl
linen
broom cl
Main entrance
Studio entrance
Children's entrance

house, and there is every indication that the exigencies and aims of contemporary living are rapidly bringing it back to a position of comparable importance.

Out of this process of reassessing the function of various rooms in the light of modern living needs has come a variety of combinations — some perhaps overdone, like the guest room-study, but others full of interesting possibilities. Bringing the dining room into the kitchen — or vice-versa, depending on where you place the emphasis — should certainly make a more interesting room than either one alone.

Some of us, depending on our way of living, like to apportion the master-bedroom space so that we get a small sitting room next it, and perhaps a secluded little garden terrace outside; a sort of sanctum sanctorum, useful at any hour of the twenty-four. More use per room, more house per dollar. And those of us with children are convinced that when their part of the house is designed specifically for their needs — not only sleeping, but their work and recreation — the whole family benefits.

Segregation of the children's rooms from other rooms may be especially desirable in cases where the adult entertainment attains fairly noisy levels, or where radio or television (relatively new sources of noise in the home) would interfere with children's sleep. However, it is possible to lean too far in this direction: children must have supervision, day and night, and it is not healthy for the child nor does it make for parental peace of mind to carry segregation to the point of ostracism.

Wherever and whatever the problem, we have become accustomed to seeing it approached on the basis that if a solution can be found which works better, more easily, gives us more pleasure and doesn't cost any more — it's worth considering.

The possibilities are by no means fully explored. Only recently Editor Stowell suggested to us that in certain homes the library might very well be combined with the dining room. A table is needed in both; books make an attractive environment for dining; and dinnertable discussions can be authoritatively resolved with a minimum of delay and lost motion. And too it can be used for evening study by youngsters or adults.

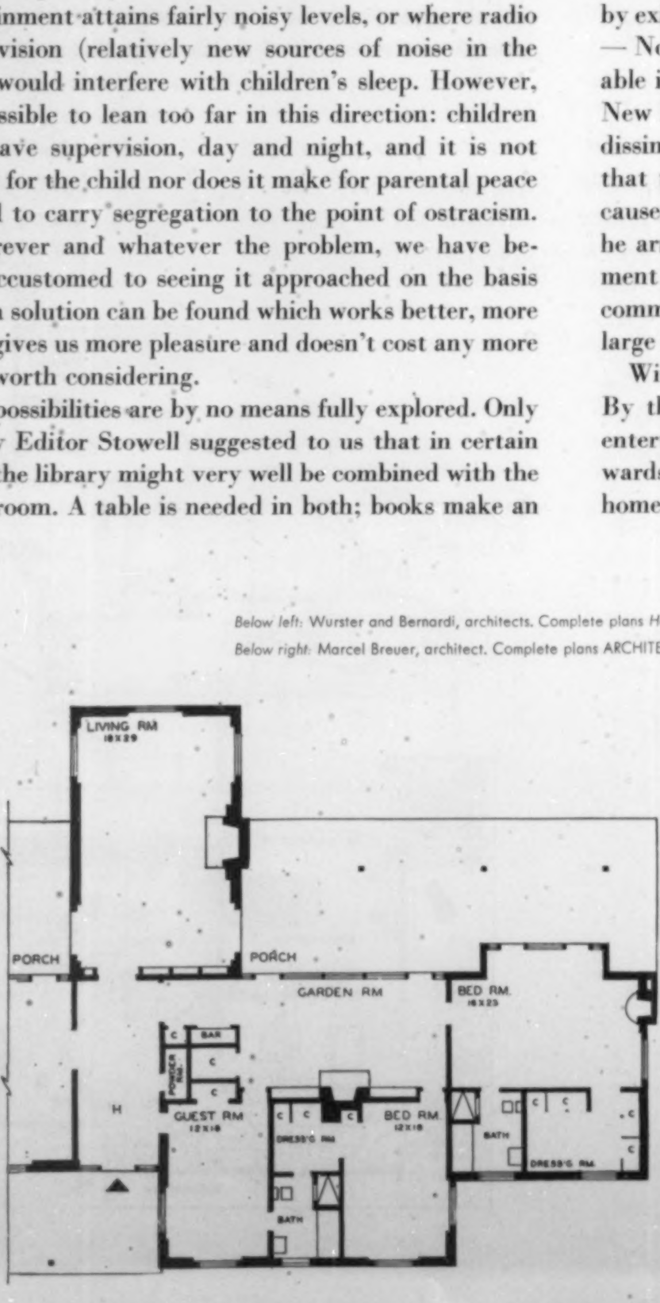
The appraisal of changing patterns in home living is not without hazards which may result in architectural expressions of somewhat less than enduring value. Specifically, it is possible to mistake a popular fad for a pattern of living. Twenty-five years ago it seemed that no home could possibly be considered complete without a sleeping porch; the population had apparently contracted some form of nocturnal claustrophobia. But it passed, and the sleeping porch virtually is no more. The cellar rumpus room, another "must" of a few years ago, also seems to have lost whatever charm it had; and it remains to be seen whether some of our present devices — such as dining-to-kitchen pass cabinets (though they were popular in the '90s) or eating bars equipped with stools — are perhaps similarly transitory and for a similar reason.

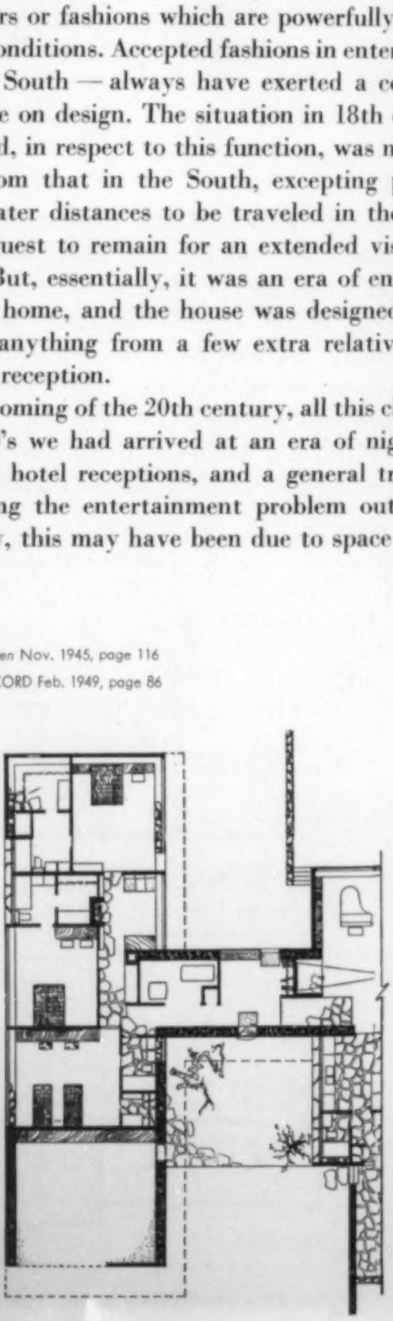
It seems accurate to make a distinction between fads, which seem motivated by no important forces, and those manners or fashions which are powerfully moved by existing conditions. Accepted fashions in entertaining — North or South — always have exerted a considerable influence on design. The situation in 18th century New England, in respect to this function, was not very dissimilar from that in the South, excepting perhaps that the greater distances to be traveled in the South caused the guest to remain for an extended visit once he arrived. But, essentially, it was an era of entertainment in the home, and the house was designed to accommodate anything from a few extra relatives to a large formal reception.

With the coming of the 20th century, all this changed. By the 1920's we had arrived at an era of night-club entertaining, hotel receptions, and a general trend towards keeping the entertainment problem out of the home. Partly, this may have been due to space restric-

Below left: Wurster and Bernardi, architects. Complete plans House & Garden Nov. 1945, page 116

Below right: Marcel Breuer, architect. Complete plans ARCHITECTURAL RECORD Feb. 1949, page 86





tions and to the easy money that made costly outside entertainment practicable; but it was also due to the increasing "servant problem" which would not accept the added burden of catering to guests.

Of recent years, the servant problem having ceased to exist with the disappearance of the servants, the trend has been to bring our guests back again into our homes — but on a simple, informal basis which is more and more clearly reflected in the plan of the contemporary house, as certainly it should be.

There is neither space nor need here to list the accomplishments of modern house architecture along these lines; the important thing is that in a span of a relatively few years so much has taken place which only a little while ago seemed impossible of attainment in our hide-bound, conformist society. And perhaps there is reason to hope that even greater things, more difficult things, will be accomplished in a few more years.

Two of the factors essential to such progress appear to be present: first, a more mature and intelligent attitude on the part of the client, an inclination to simplify his environment and to correlate his building program with the most important needs of his family and the requirements of their way of life; and second, a growing realization on the part of architects that what has been accomplished in the way of plan, design and structure is still not generally as broad in the scope of its objectives as it can become.

The first of these should grow, as we have suggested, both by force of example and by virtue of increasing consciousness of what the client himself, through a sincere and critical selection of the elements of living most vital to him, can contribute to the success of the design.

The promise of architectural progress — not only in the development of the accepted approach to a functionary solution, but also in the broadening of the concept of what all the elements of design can do for the individual — seems indicated already in the work of some leaders in the profession and in the favorable impact of that work on younger architects who must be counted upon to carry forward what has been begun.

Function, we believe, is not so limiting a term as is generally supposed. It does not necessarily restrict us to the mechanics of living, the pattern of footsteps, the height of a man's head, the reach of a woman's arm — important as these are and must remain. Subtler and more elusive elements are still definable as functional.

Broadly speaking, this has been sufficiently proved by the layman's reaction to the open plan and the breaking down of the architectural barrier between indoors and out. What is demonstrated, perhaps, is that people are still natural creatures, respondent to and dependent on certain impacts which do not greatly change, even when they are neglected for a considerable time. Upon the sum of all our senses, and upon the measure of our success in creating an environment perfectly congenial to them, depends to a considerable extent that condition which we describe as being happy. The contemporary architect, therefore, in designing a house, is beginning to turn his attention to a more serious and detailed consideration of the esthetic effect of form, color, volume, sound, light, texture and motion — everything that can be apprehended by the senses, as they are employed in combinations and in contrast to one another.

In other words, having found a reasonable approach to planning for function, in its utilitarian sense, the architect is preparing to tackle in the same factual and objective manner all those non-utilitarian elements which have, nevertheless, a powerful and important function in the home environment.

These are great objectives, worthy of the great traditions — the true traditions — of architecture. The more nearly we approach to their attainment, the more complete will be the interaction between the innumerable patterns of our familiar life and of the architecture of the house that shelters us; and the more will architecture come to our aid in new ways — through channels open, perhaps, to no other instrument.

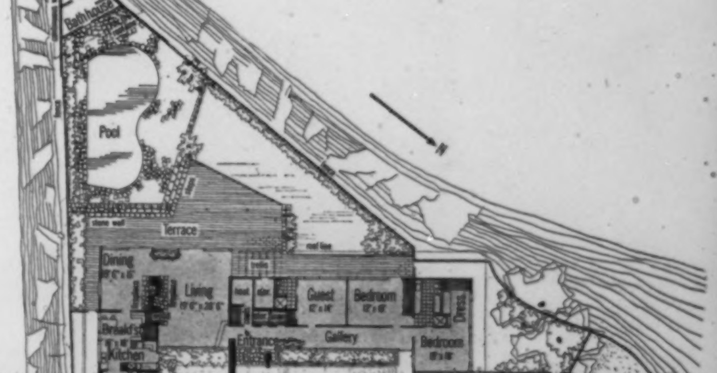
LEFT:

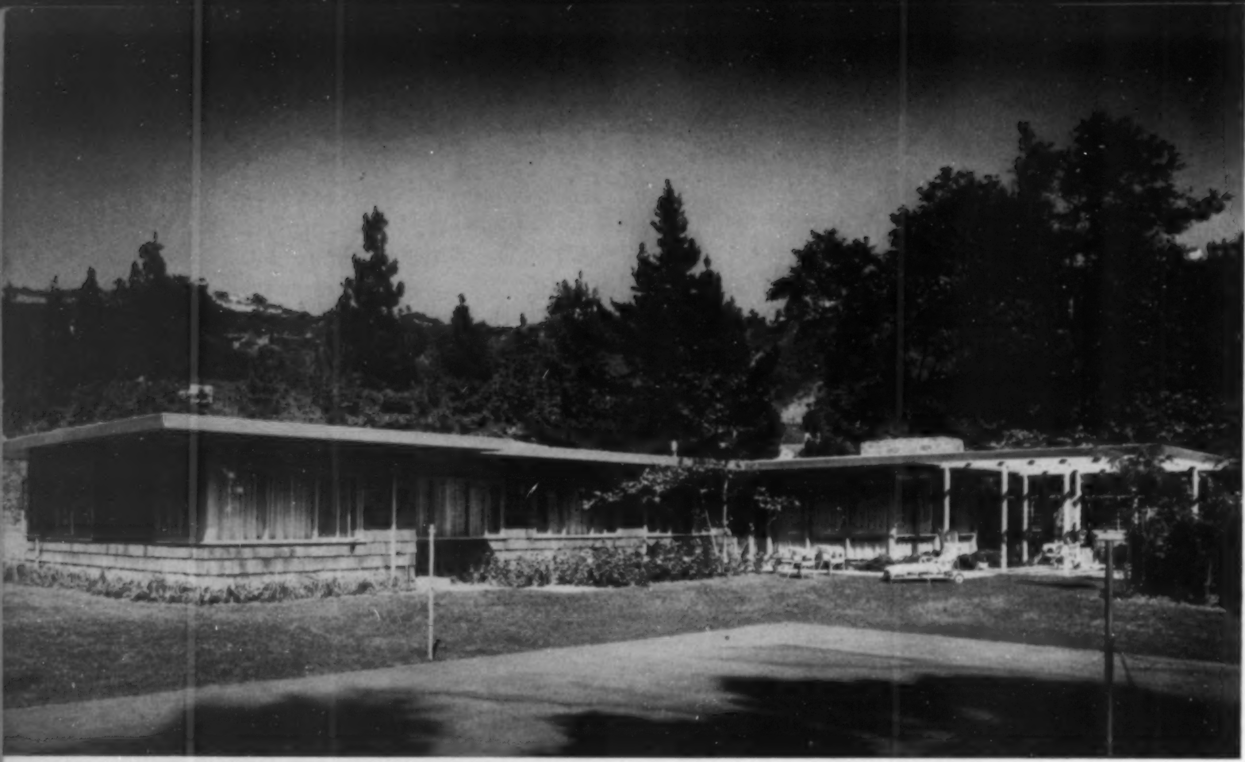
The evolution of the master bedroom into something more like a private apartment is an interesting corollary to modern house design. Beginning with a bedroom-bath-dressing room combination, we have now progressed to an occasional adjoining sitting room which in turn not infrequently connects with a small terrace or garden. Not only does this add daytime usefulness to the space but it tends to balance the freedom and spaciousness of the rooms which are common to the whole family

RIGHT:

Indoor-outdoor relationships in planning may properly be thought of as elements in designing for function; but it would be a mistake not to recognize and correctly evaluate the public's response to the esthetic values which this so-called "interpenetration" of shelter and nature has created for them. It may be doubted whether any other single feature of the modern house has had a more stimulating effect on people's imagination—a significant consideration, and perhaps one which suggests that even more emphasis could profitably be placed on the client's sensory response to his architectural environment

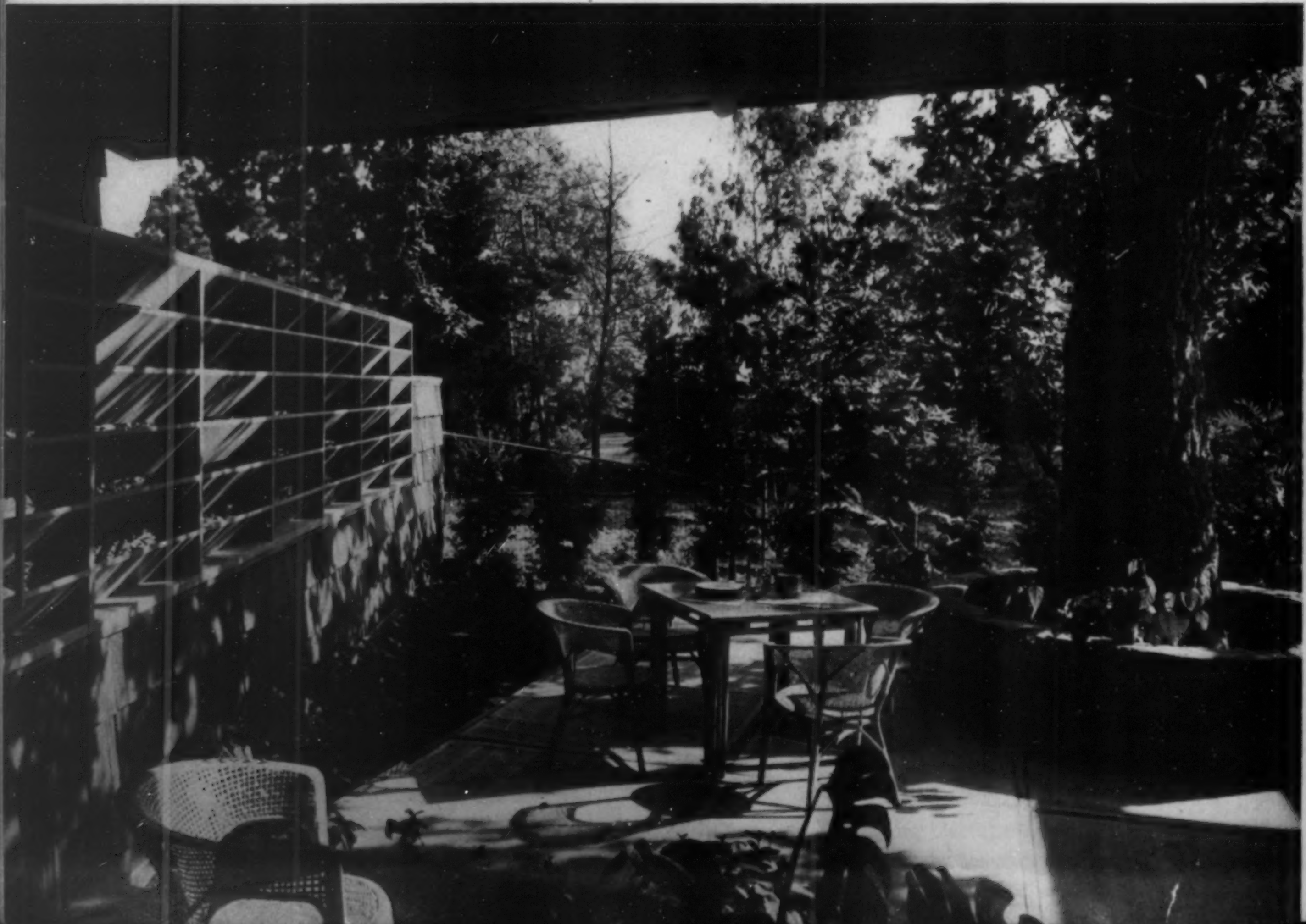
Below: Henry Hill, designer. Complete plans *House & Garden* Dec. 1948; page 131





HOUSE AND LOT DESIGNED AS A RELATED WHOLE

Residence in Beverly Hills, California



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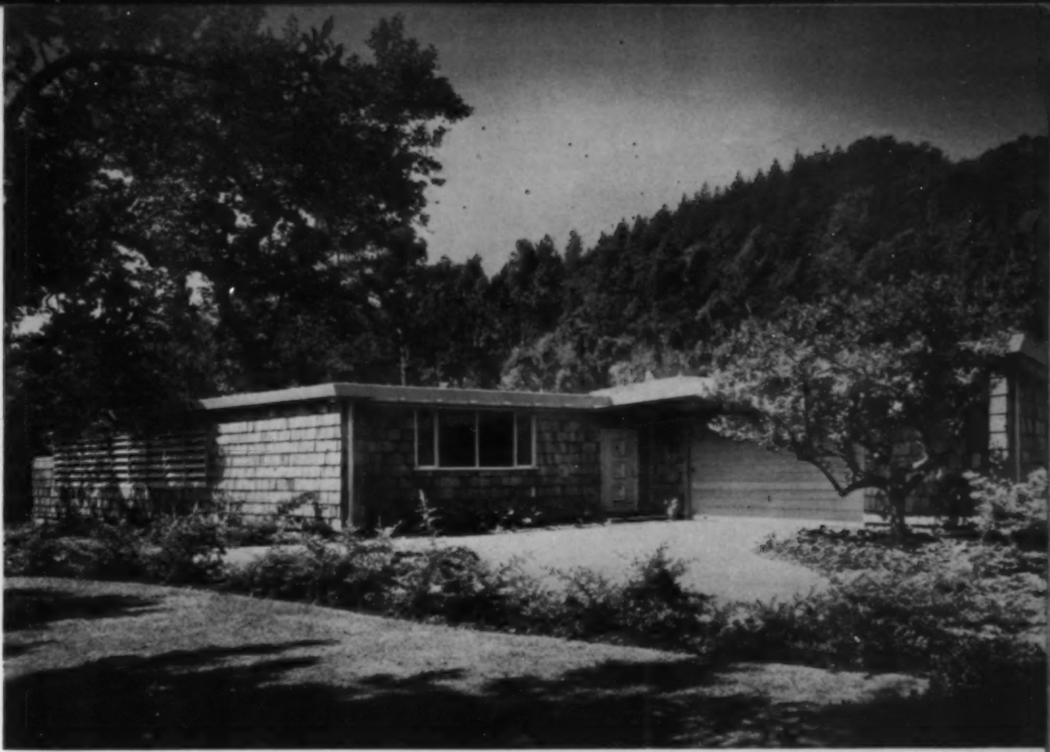
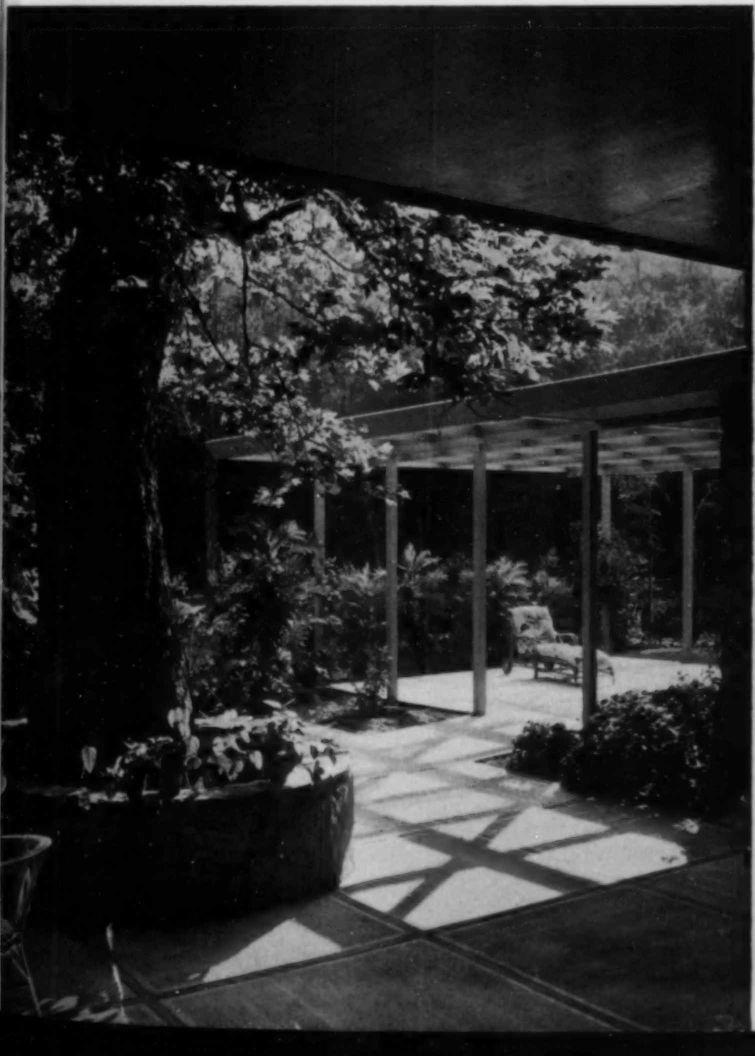
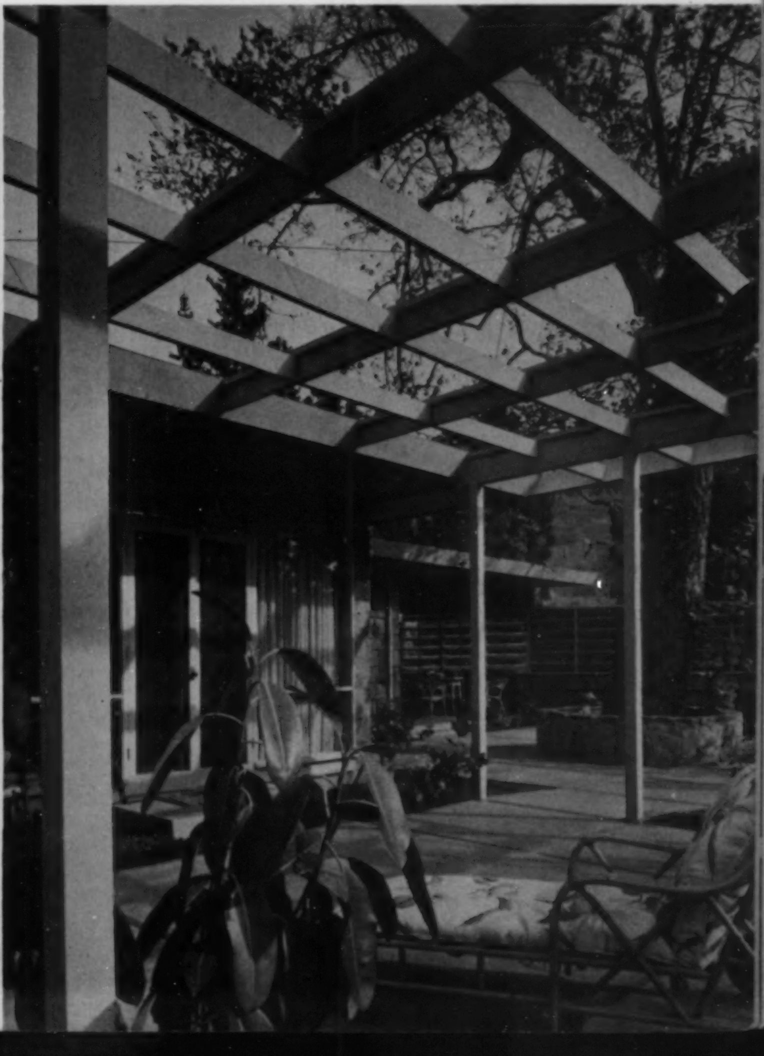
Architects

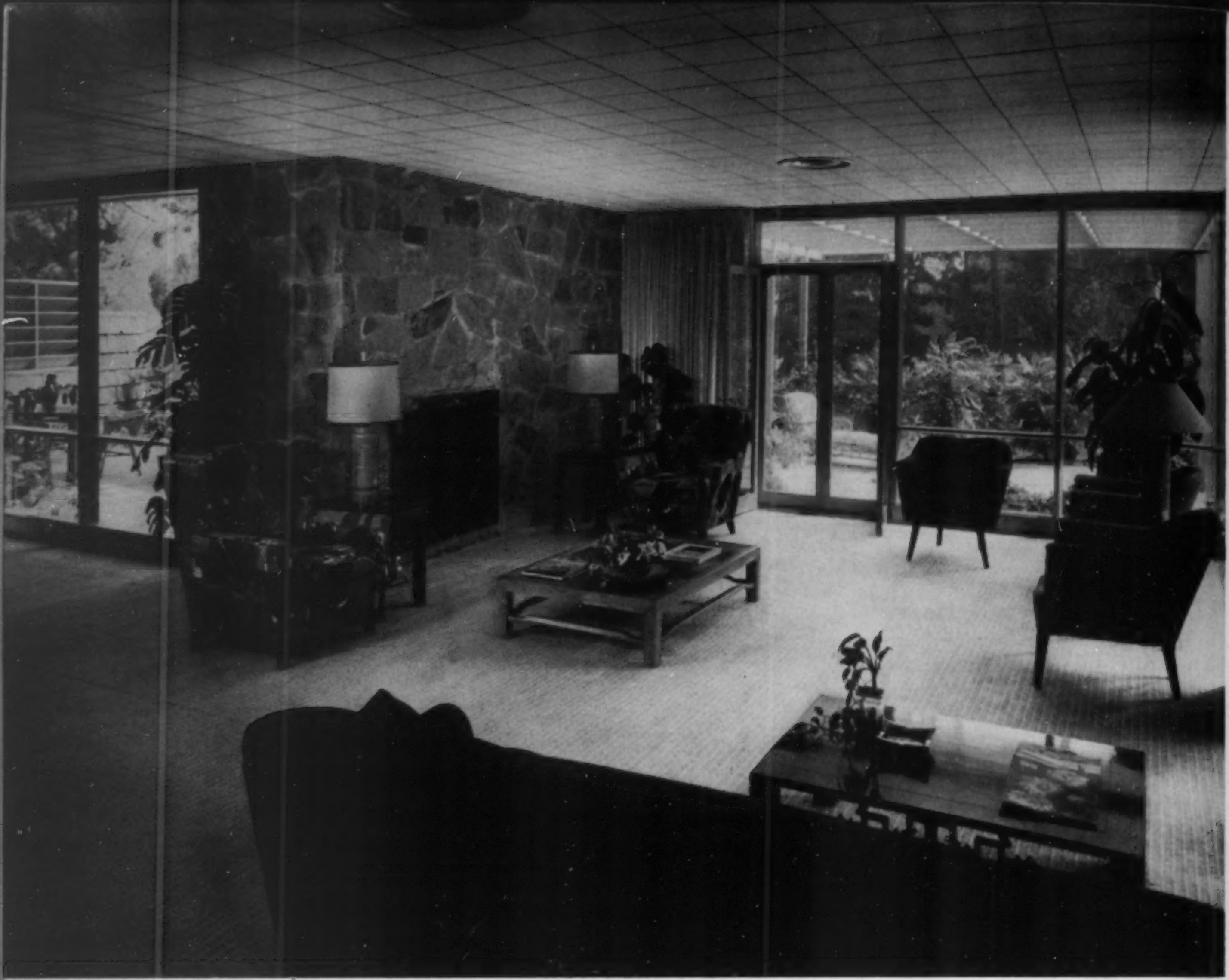


THE simple horizontal line of this house, as much as its walls of double hand split shakes, keeps it in pleasant harmony with level site and background of wooded slopes. Outdoor living centers around a large sycamore tree, identifiable in all three of the pictures below, the house having been carefully disposed to preserve such existing assets and to make the larger portion of the property available for gardens. Note adjustable louvers east of breakfast porch.

Julius Shulman Photos



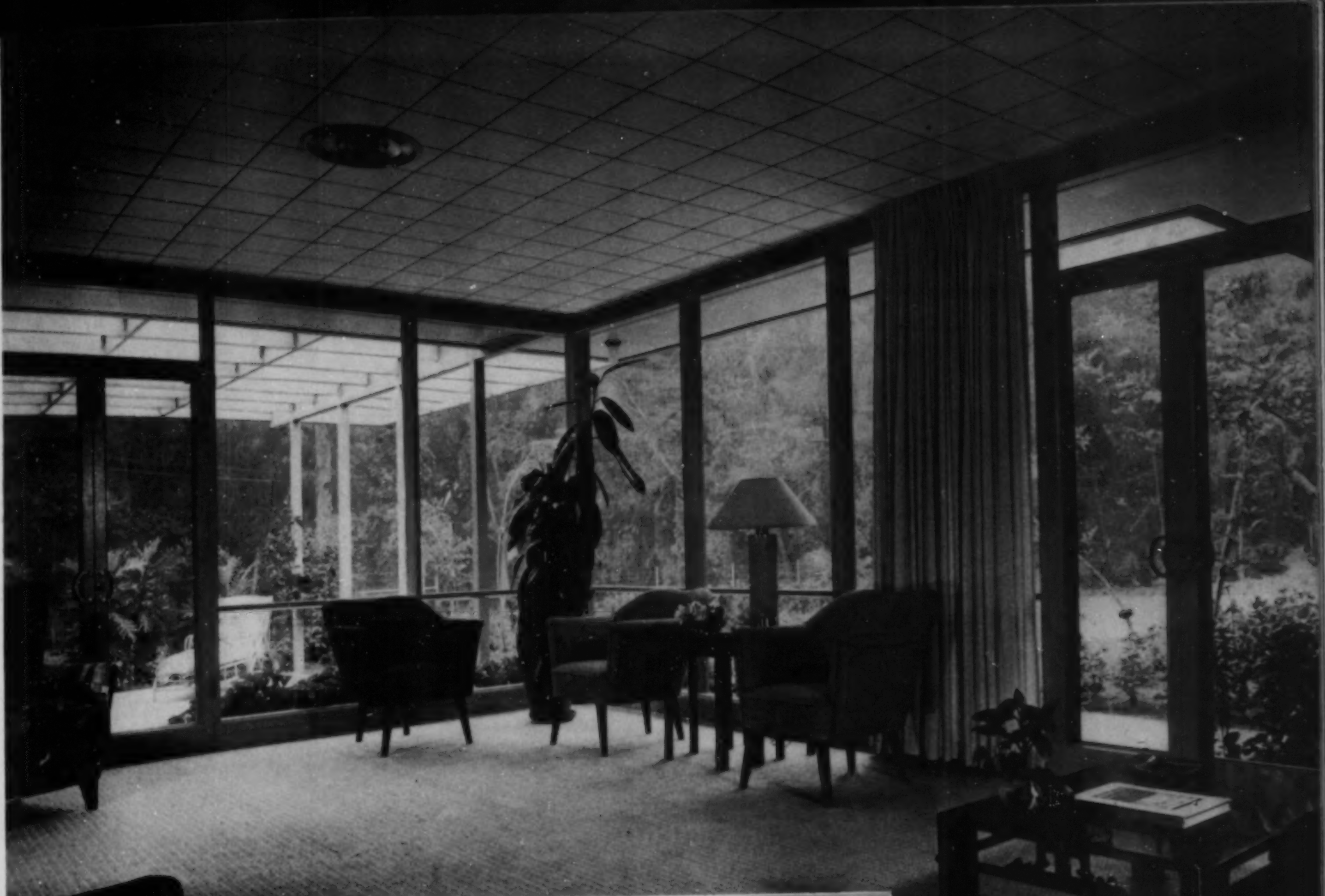


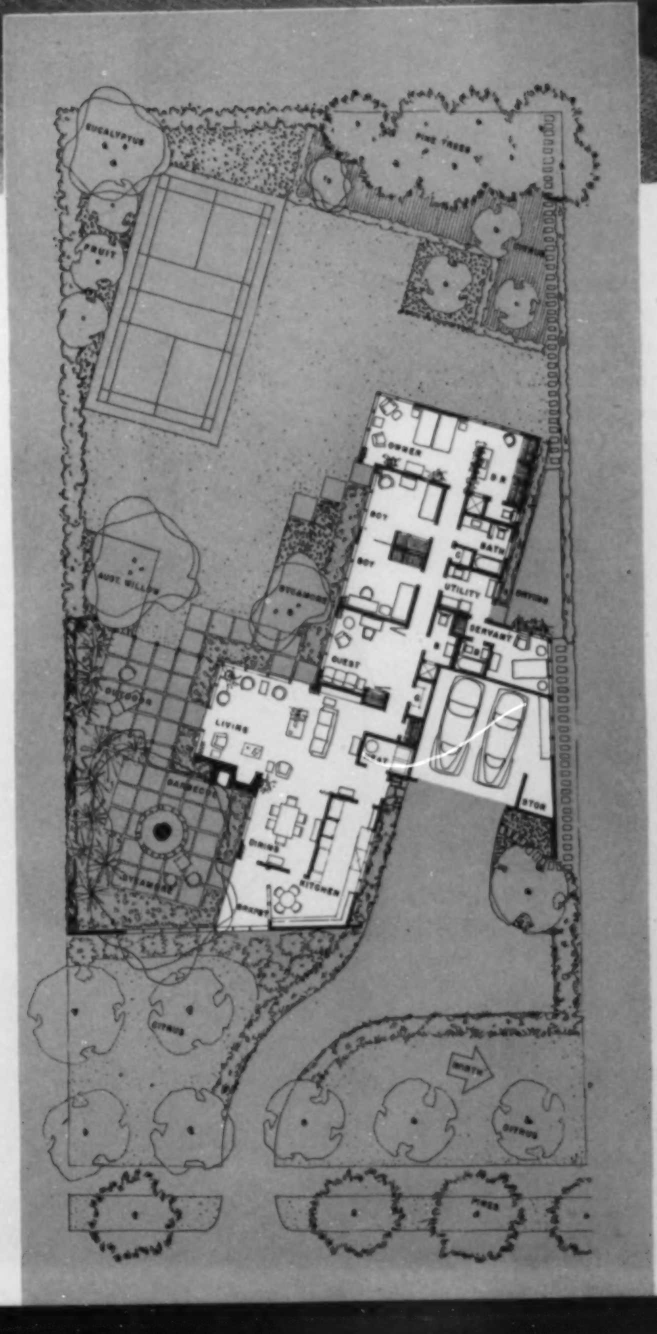


Julius Shulman Photos

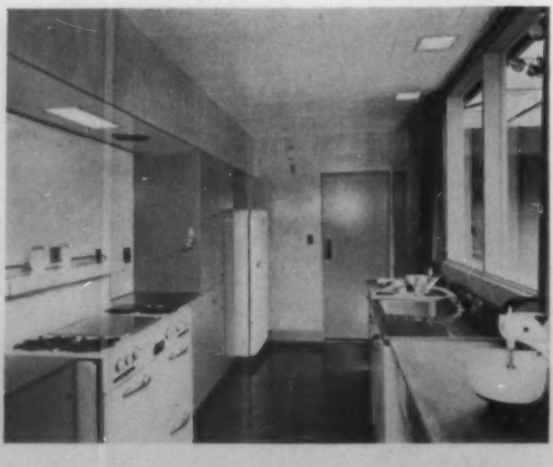
The plan is arranged to meet a fairly formidable list of requirements. A 40-ft. set-back being obligatory, the garage is placed as near the front as possible to allow recreation and gardening facilities at rear. The kitchen is the control point for everyone entering or leaving the property. Acting as a screen between kitchen and dining room, the breakfast alcove also doubles as a convenient place for "set-ups" during large dinner parties, and further serves as a connecting link with outdoor facilities. The guest room forms a buffer between the children's rooms and the living areas, and the guest bath is so placed as to be generally available even though the guest room is in use. Children's rooms may be opened into each other for daytime play, and the servant's room is near by to facilitate supervision. To secure maximum sunlight and also to reduce the effect of street noises, all rooms are oriented to the south, at an angle away from the highway.

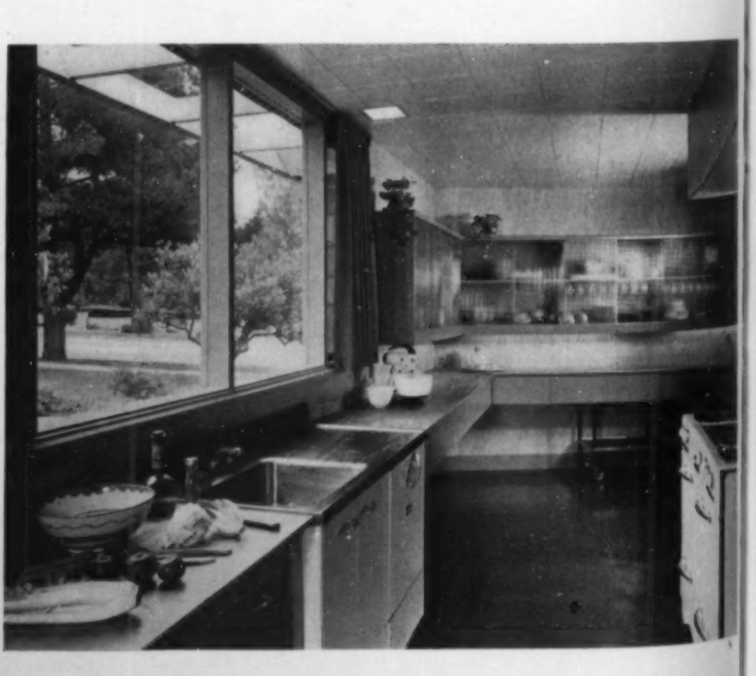
Living and dining room are planned as a single large area extensible to the outdoors—both visually and physically—by the architectural treatment. Ceilings are acoustically treated, and floors are carpet on a concrete slab. The massive chimney allows space for a terrace barbecue, seen through the dining room window, at the left

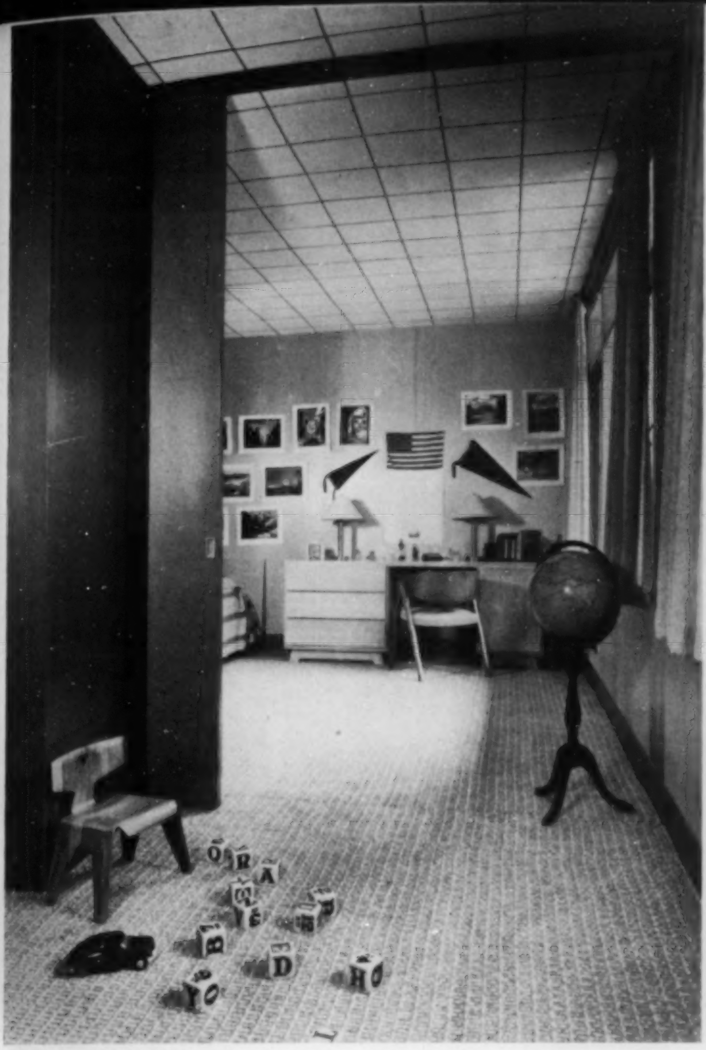



EUCALYPTUS
PINE TREES
FRUIT
CITRUS
OWNER
D.R.
BOY
BATH
BOY
UTILITY
DRYING
AUST. WILLOW
SYCAMORE
SERVANT
GUEST
OUTDOOR
LIVING
STAY
BARBECUE
STOR
DINING
SYCAMORE
KITCHEN
BREAKF
CITRUS
NORTH
CITRUS
PINES

The kitchen is designed to keep all storage facilities within easy reach of a person in a normal standing position; no cupboards, cases or drawers extend below 2 ft. 6 in. above the floor, nor over 6 ft. 0 in. above it. In the picture below, the door opens on the main entry. At right, windows dominate the sole entrance approach; breakfast alcove is out of sight around the corner. At far right, the breakfast alcove; figured glass and plywood walls of this section make a pleasant transition between kitchen and dining room

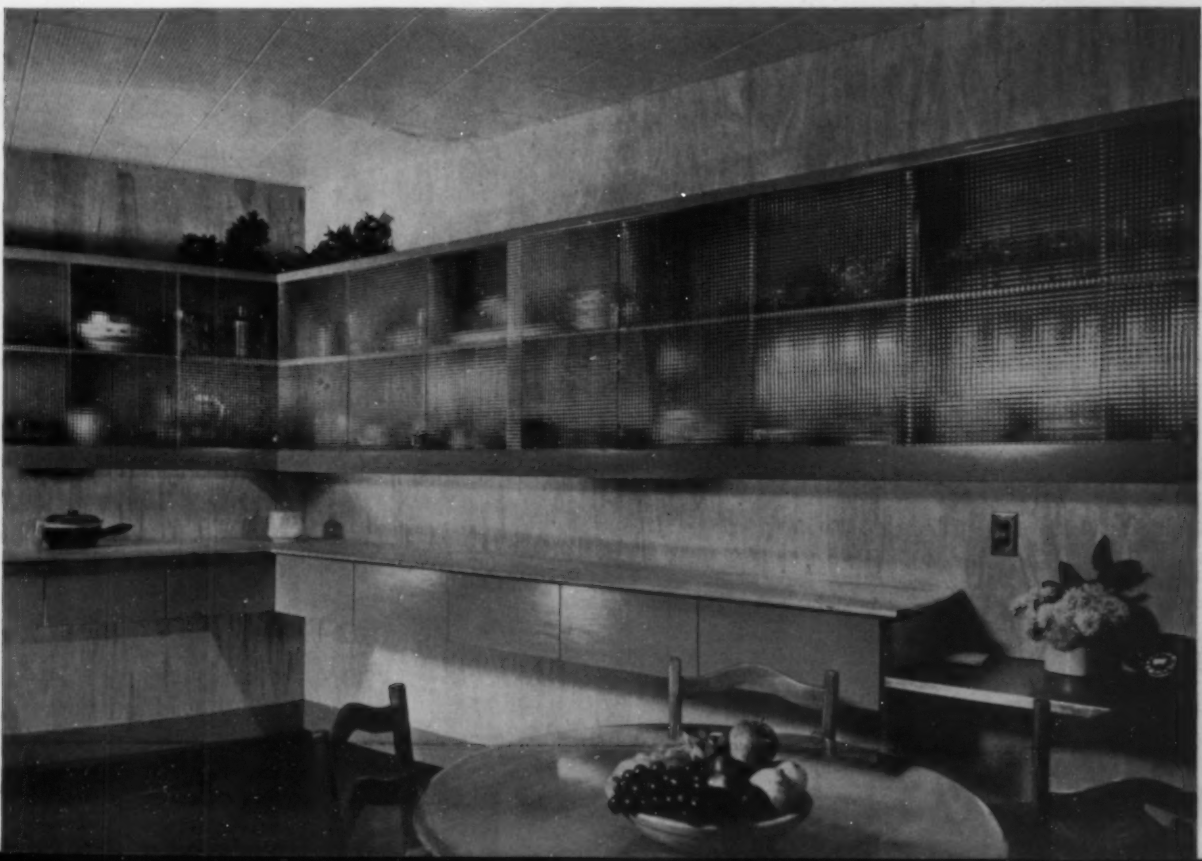


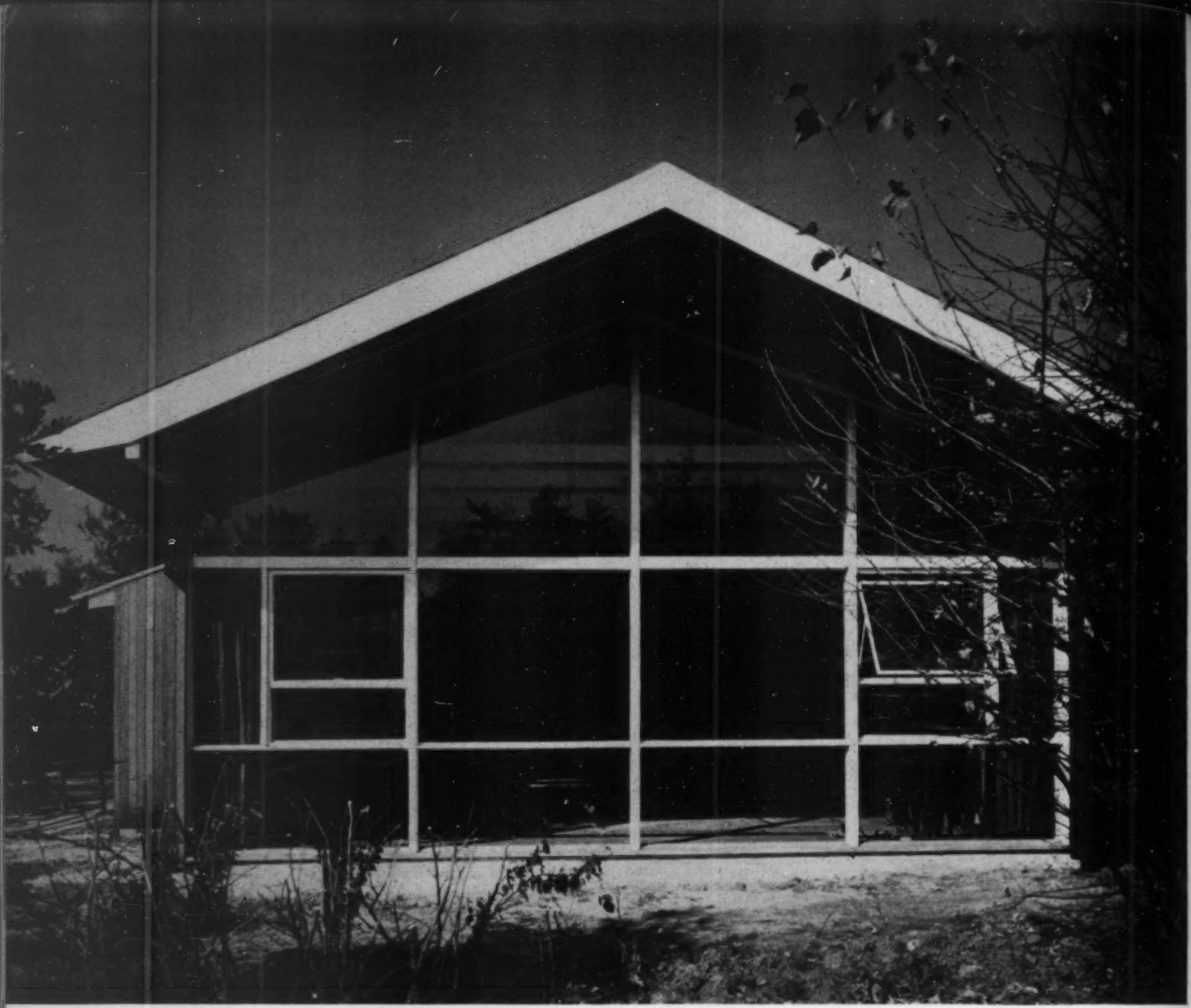




The advantages of maximum flexibility in the planning of children's rooms are well illustrated in the three photographs at left. The two boys, being of different ages, have separate rooms affording quiet for each as required but which are capable of being converted into a large play area by means of a sliding panel door moving between two closets. The ceiling is acoustic material applied directly on backing. Consistent with the treatment in other rooms, the walls are hardwood plywood; some six types of wood are used in different parts of the house, with occasional walls painted in color for accent.

Julius Shulman Photos





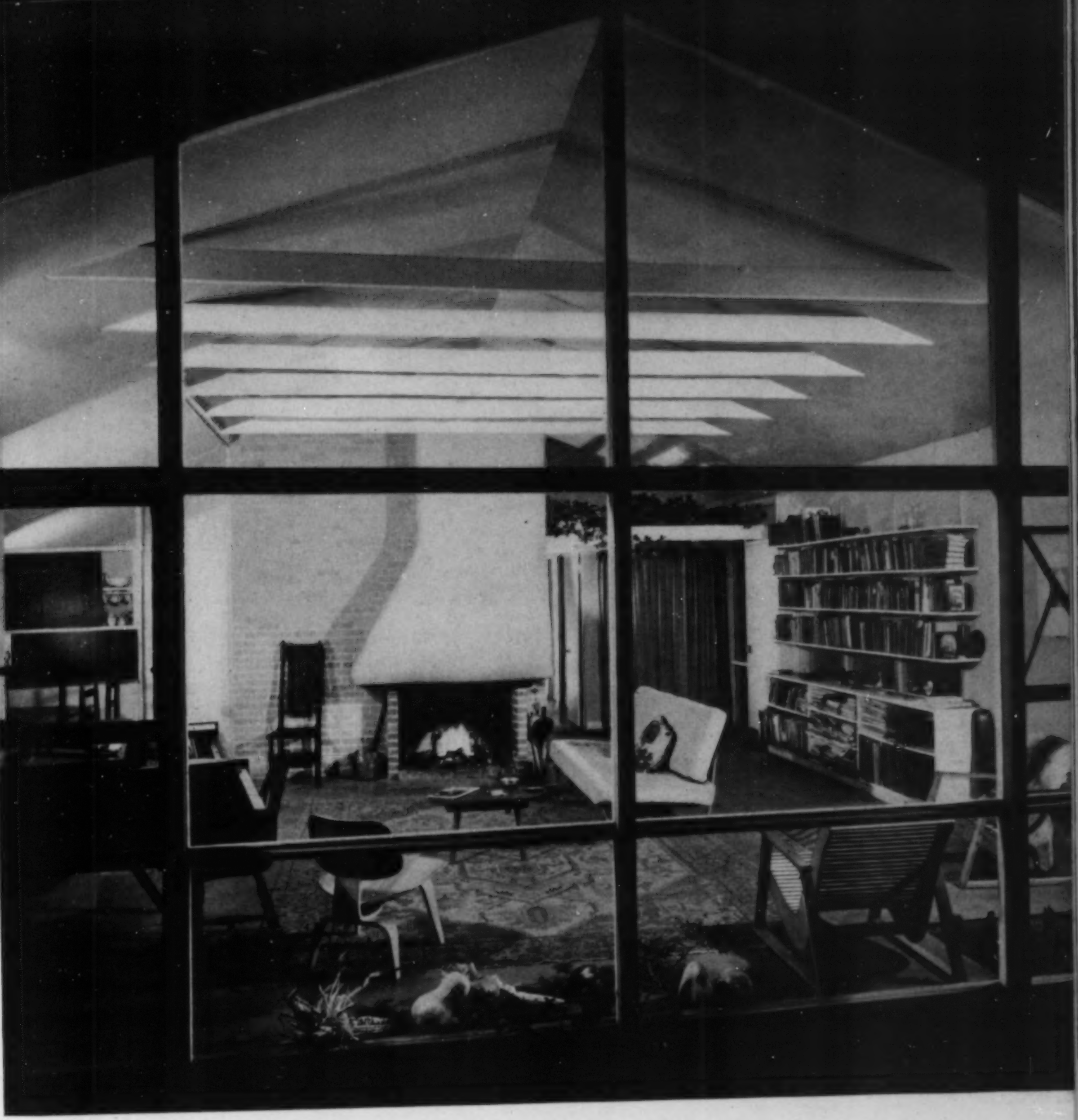
SPACIOUSNESS VIA THE THIRD DIMENSION

Residence in Concord, Massachusetts

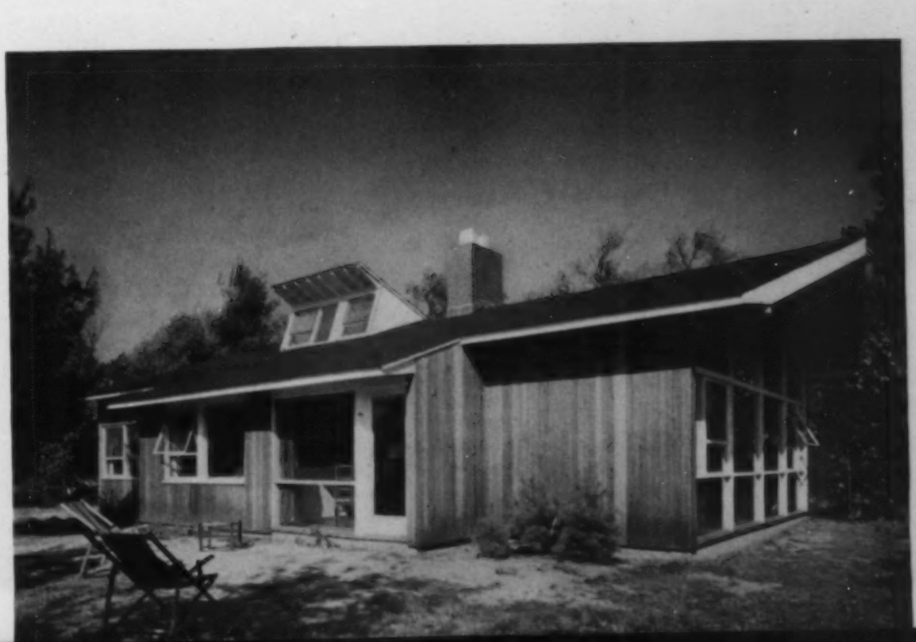
Hugh Stubbins, Jr.

Architect

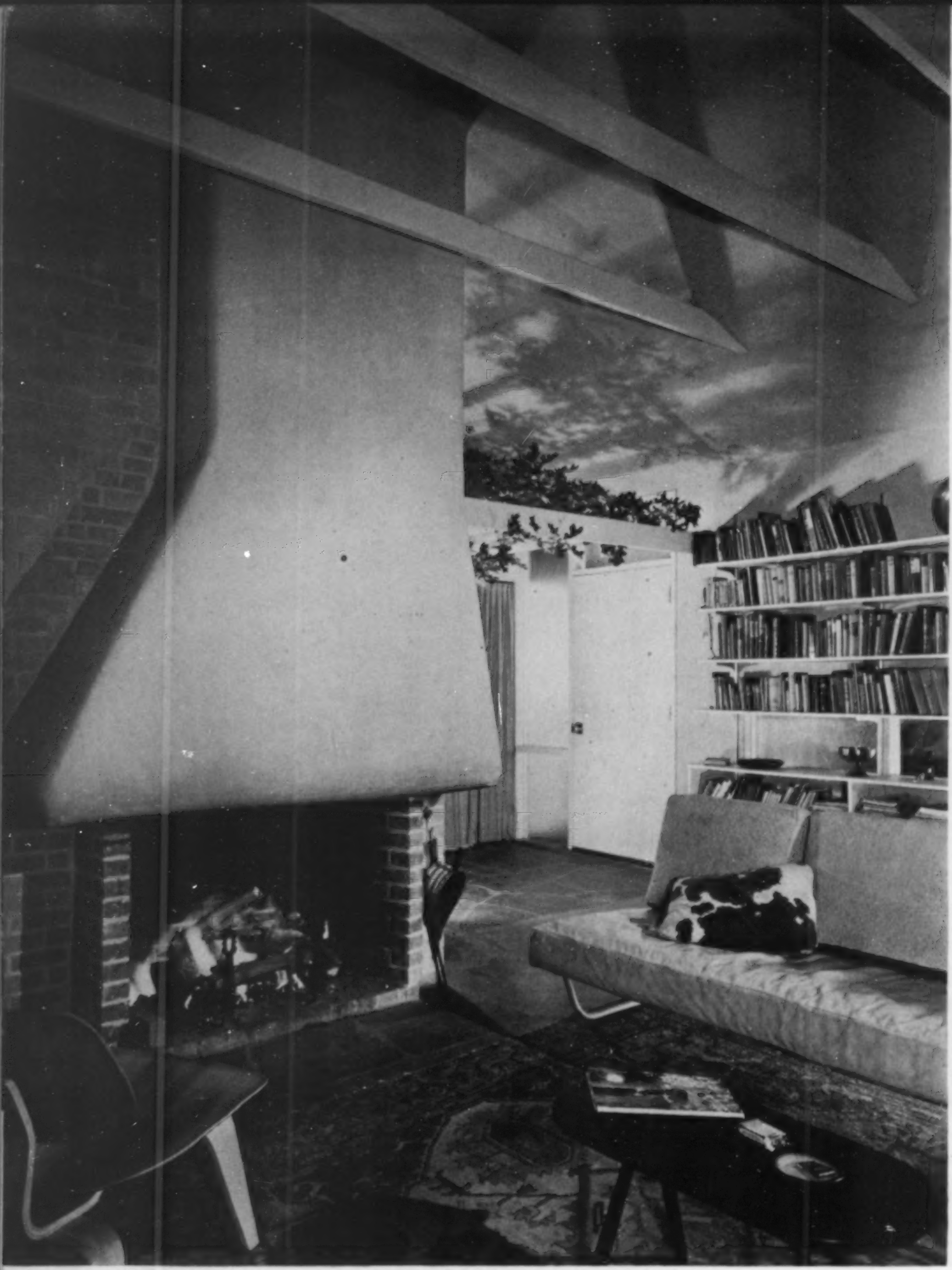
THE owner of this house, a musician and music teacher, required a living room large enough for piano lessons and group singing. As the building budget was extremely limited, the dining and hall areas are made small additional parts of the living room and the architect has cleverly acquired space vertically, as seen above, and has opened the entire long side of the room with glass — all of which makes the 18 by 20 ft. area seem more spacious.



Ezra Stoller: Pictorial-Services. Courtesy Ladies' Home Journal



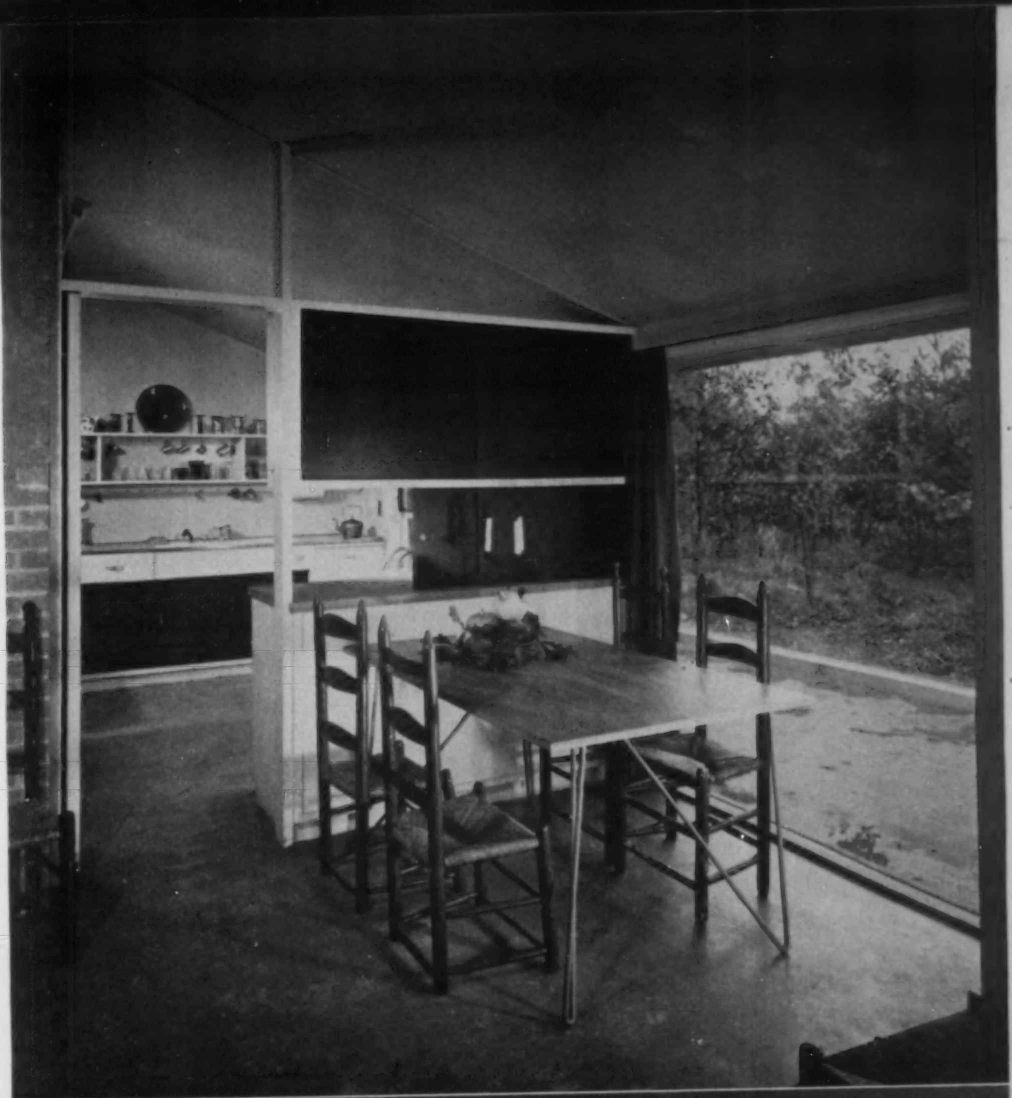
At right: view from the southwest. Projecting above the roof line, the bathroom window, cocked up at a saucy angle, gives an unexpected lift to the design. Walls, oil-finished redwood; roof, asphalt shingle. Above: the living room

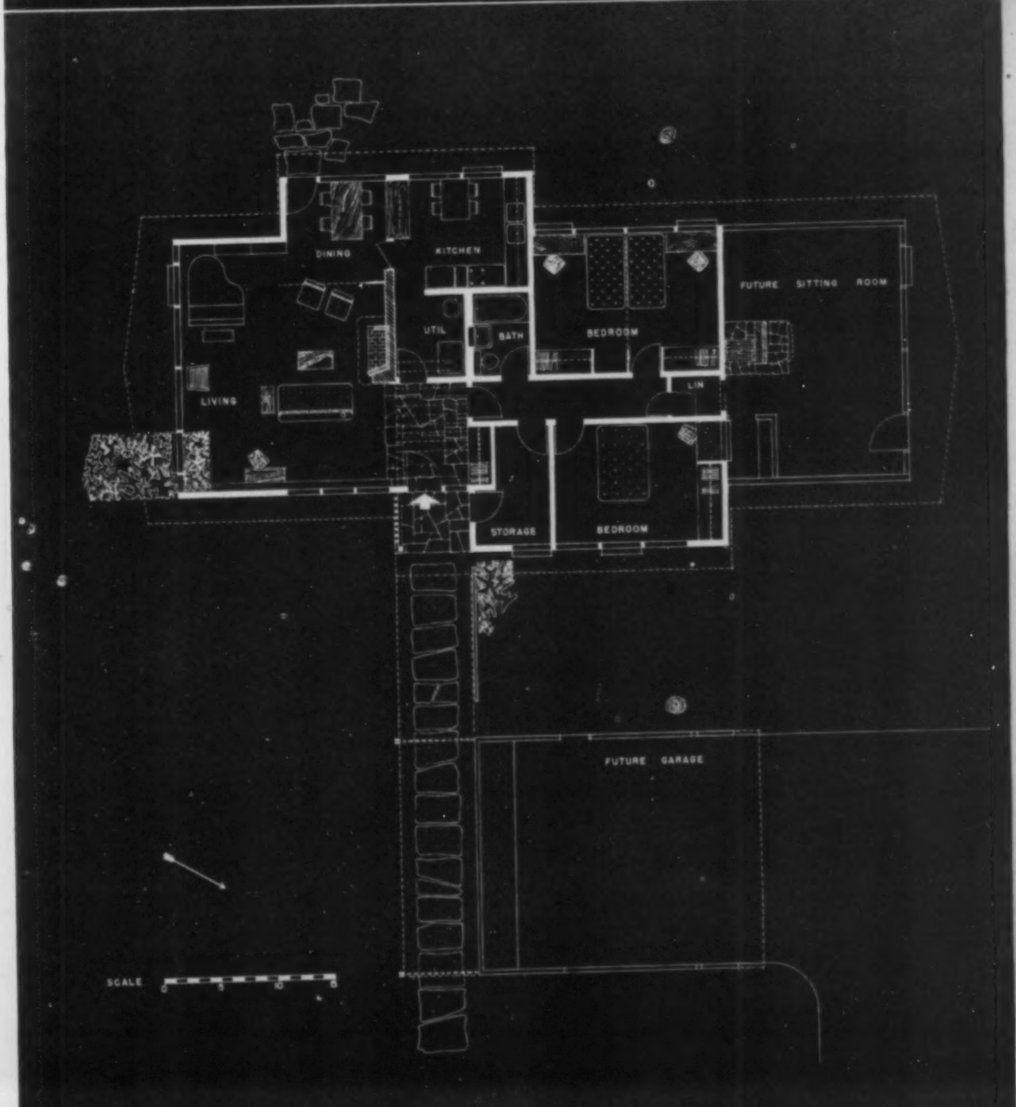


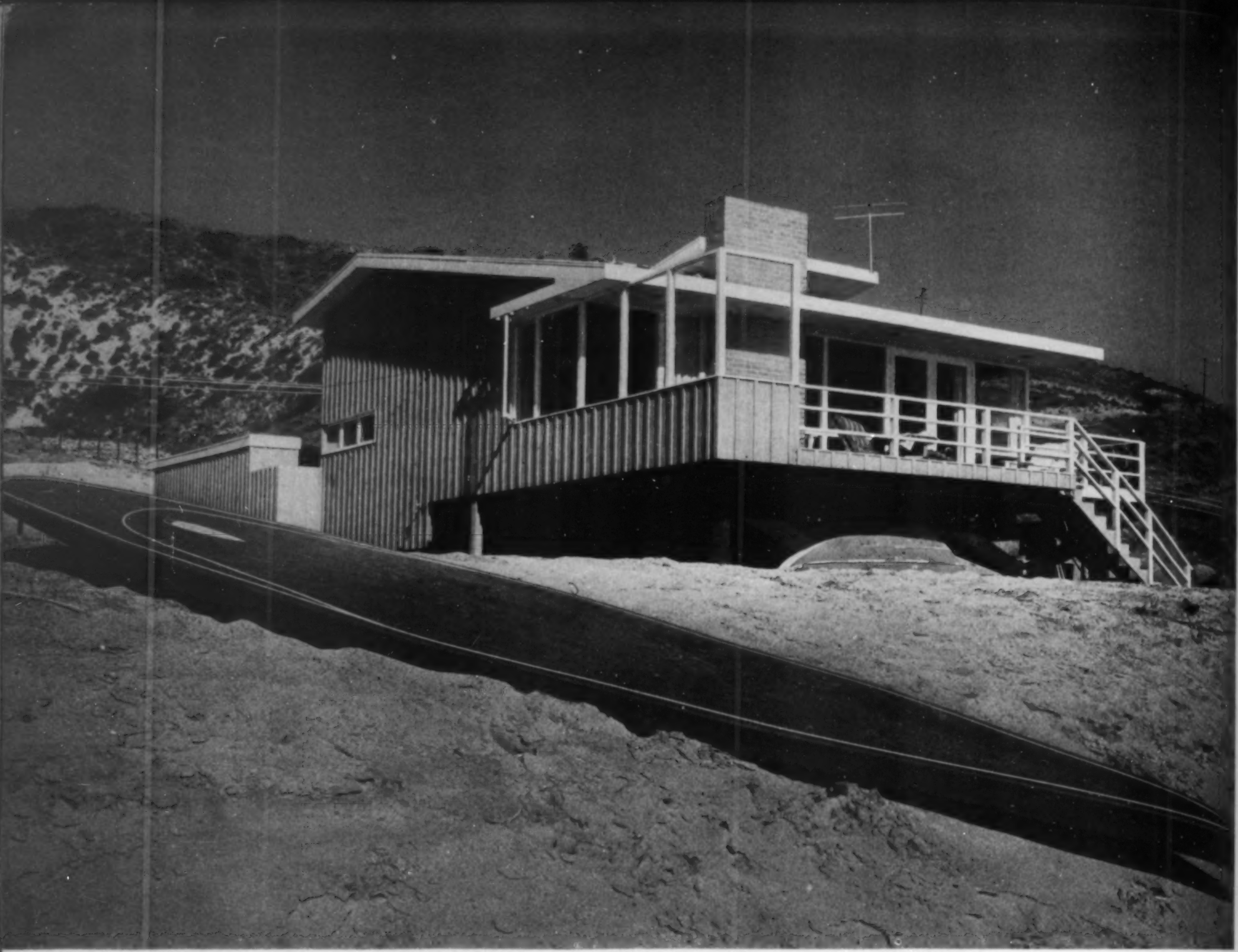
The chimney, except for the fireplace and flue, is concrete brick with a plaster hood supported on metal rods. Walls are rock lath, ceilings metal lath, with a single coat of plaster. Floor is painted concrete

Ezra Stoller: Pictorial Services, Courtesy *Ladies' Home Journal*

As shown in the plan and pictured at left, the entry serves multiple purposes, acting as front door, kitchen entrance (via the utility room) as well as giving access to the storage room through the door at right. The larger bedroom, occupied by the two children, can be divided by a curtain. Plans for future additions to the house include a large family sitting room, and a garage connected to the entrance by a covered way. Steel pipes laid in concrete supply radiant heat. All fixed glass is wood framed, opening vents are projected metal sash




DINING
KITCHEN
FUTURE SITTING ROOM
UTIL
BATH
BEDROOM
LIVING
LIN
STORAGE
BEDROOM
FUTURE GARAGE
SCALE
0
5
10
15



Julius Shulman Photos

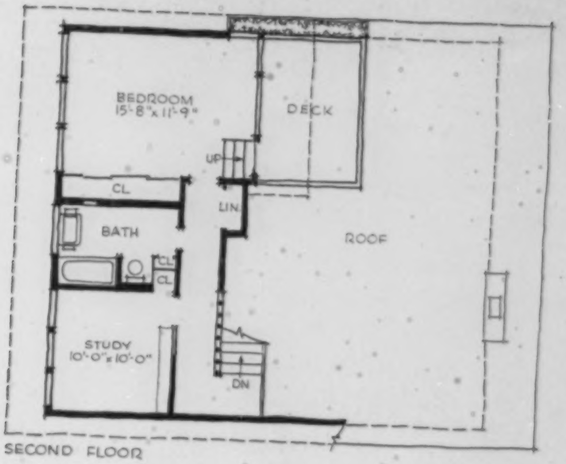
A STORY-AND-A-HALF HOUSE ON A NARROW LOT

Residence at Malibu Beach, California

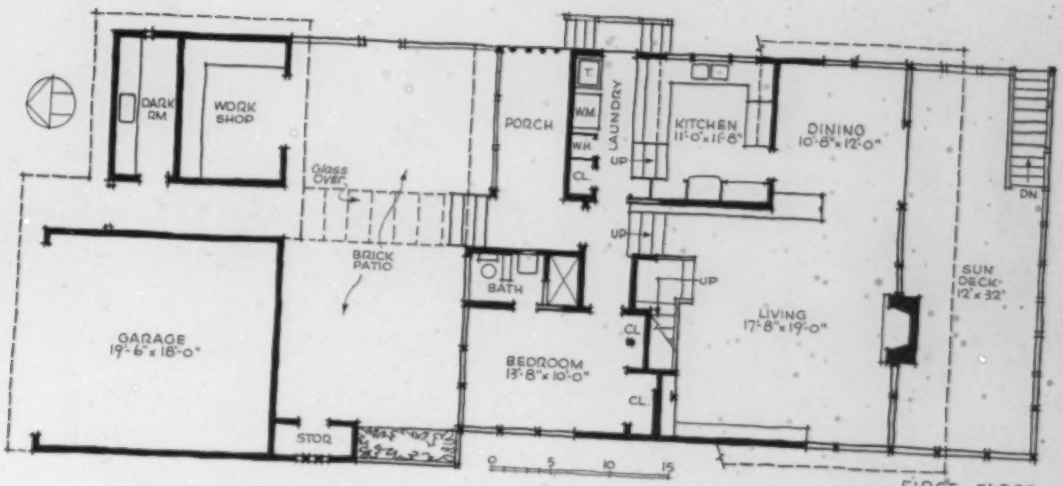
Griswold Raetze, Architect

THE beach lot on which this house is built is only 40 ft. wide by about 75 deep, requiring the architect to perform some ingenious manipulations in order to meet all the owner's needs yet not to leave the house reared up in the air like a two-story box. A story-and-a-half scheme was developed, with a glass-screened sun deck facing the ocean and a protected patio at the opposite side, between the house and the garage. All rooms facing the ocean are opened up to the view, while windows on east and west sides are held to a minimum for the sake of privacy. The house is built on wood joists supported by pilings on 13-ft. centers. Garage and storage rooms on concrete slab.

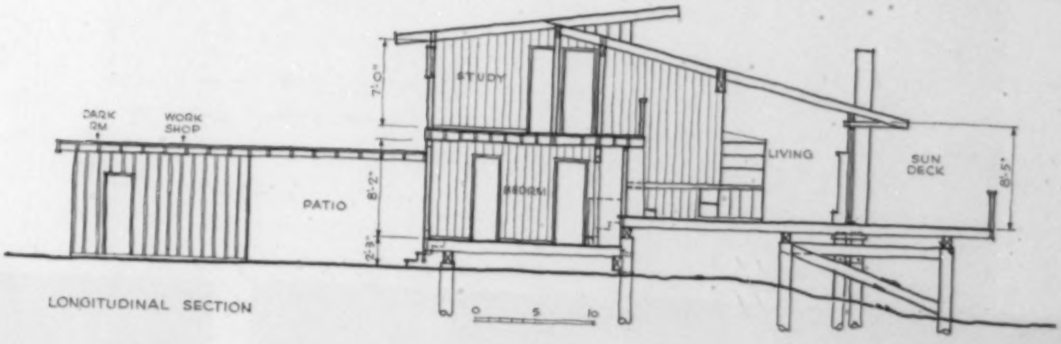
Plan requirements called for a living room large enough for a grand piano, a kitchen, study, two bedrooms and two bathrooms. The owner's room has a small roof deck facing the ocean. Exterior walls are rough board and batten; the roof is white composition


BEDROOM 15'-8" x 11'-9"
DECK
UP
CL
LIN
BATH
ROOF
CL
CL
STUDY 10'-0" x 10'-0"
DN

SECOND FLOOR


DARK RM
WORK SHOP
PORCH
LAUNDRY
W.M.
W.H.
CL
UP
KITCHEN 11'-0" x 11'-8"
DINING 10'-8" x 12'-0"
DN
Glass Over
BRICK PATIO
UP
BATH
UP
GARAGE 19'-6" x 18'-0"
LIVING 17'-8" x 19'-0"
SUN DECK 12' x 32'
CL
BEDROOM 13'-8" x 10'-0"
CL
STOR
0 5 10 15

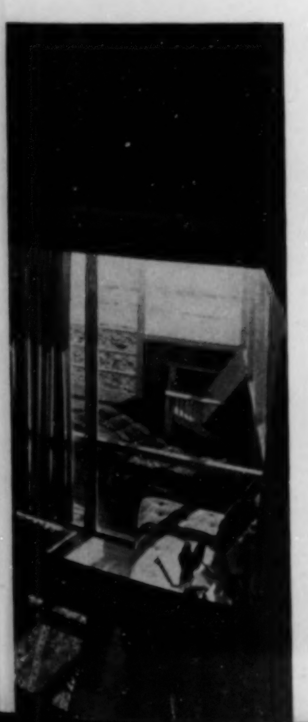
FIRST FLOOR


STUDY
7'-0"
DARK RM
WORK SHOP
LIVING
SUN DECK
8'-5"
PATIO
8'-2"
BEDROOM
2'-3"
0 5 10

LONGITUDINAL SECTION

Julius Shulman Photos

Interior walls of the living-dining room are V-jointed redwood boards; the master bedroom, shown below at left, is finished in Philippine mahogany plywood. Drywall construction is employed throughout, with sheetrock painted in cool colors in the rooms not finished in wood



Roger Sturtevant Photos

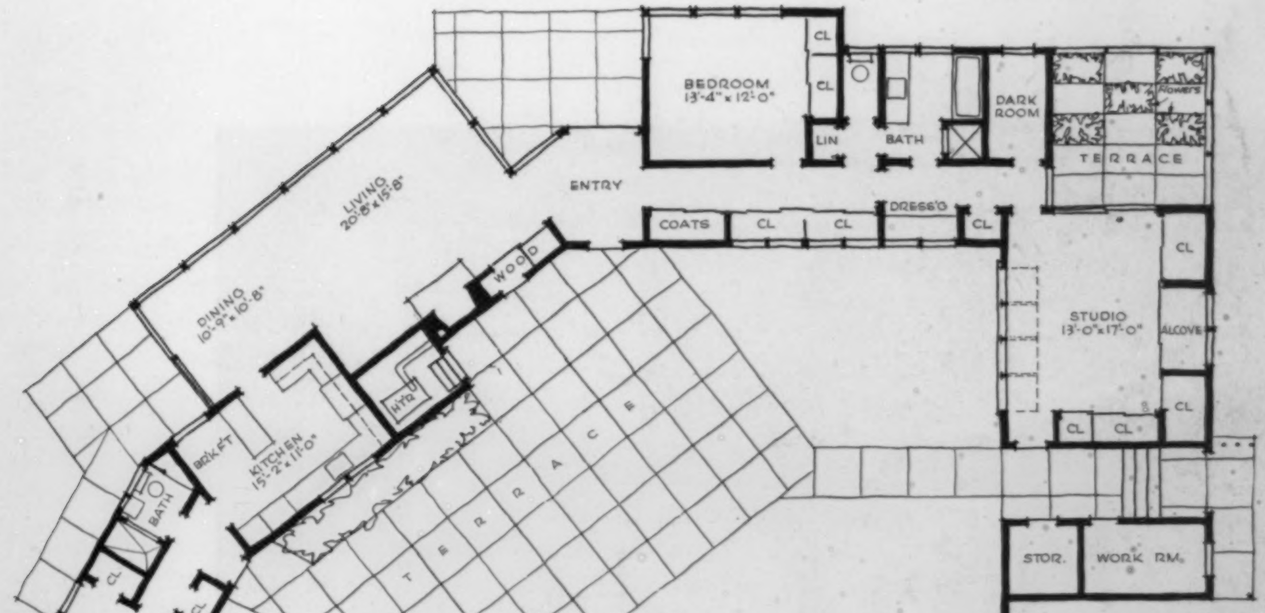
Above: this side of the house faces a broad panorama of hills. Below: identifiable by roofs are carport, studio, bedroom, entry and living areas

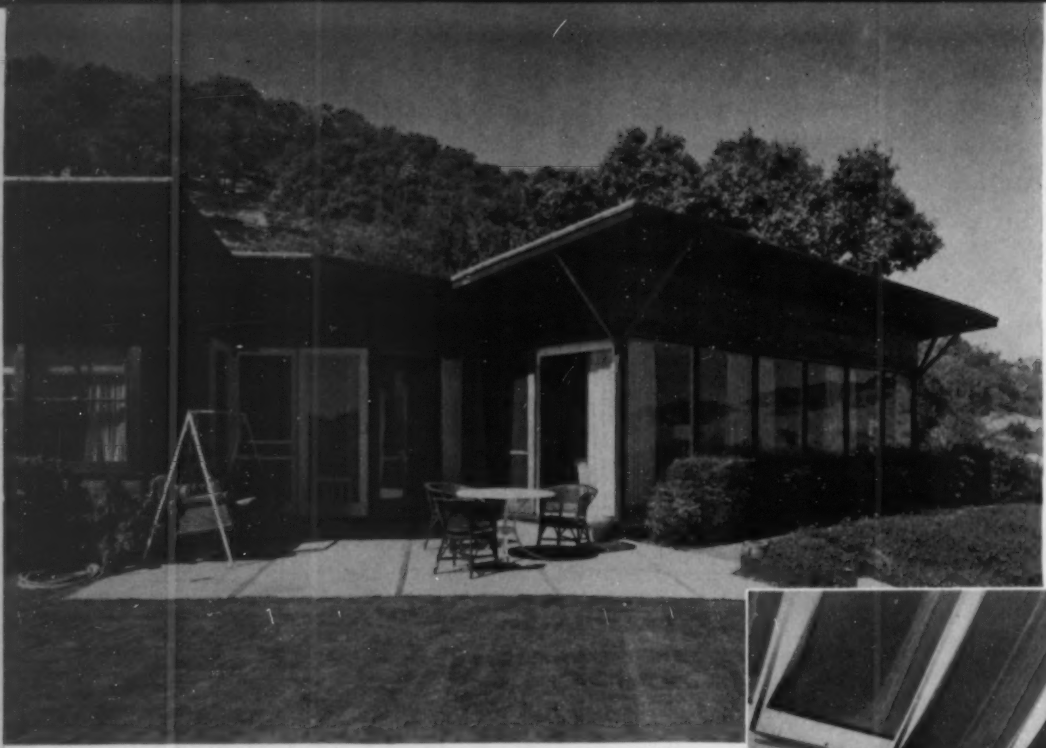
Clarence W. W. Mayhew, Architect

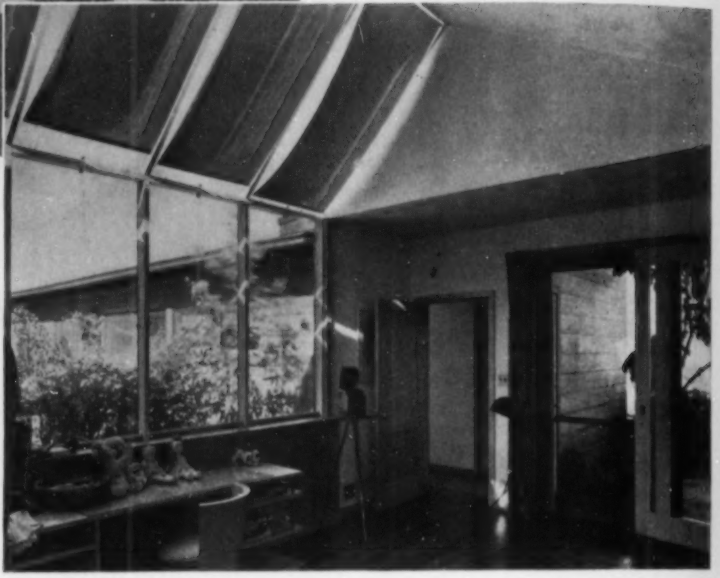
One of the owners of this house, a well-known portrait photographer, required that her studio and related workrooms comprise an integral part of the design — yet furnished with a separate entrance, and isolated from the indoor and outdoor living areas. The studio, which has its own southeasterly terrace for outdoor work, also doubles as a bedroom with bed and closets concealed by sliding Japanese paper screens. The other bedroom and bath provide the buffer between this section and the main entry and living room. Servant's wing is at the extreme opposite end. Exterior is flush redwood siding; roof, tar and gravel. The heating system is forced warm air.

RESIDENCE IN CONTRA COSTA COUNTY, CALIFORNIA

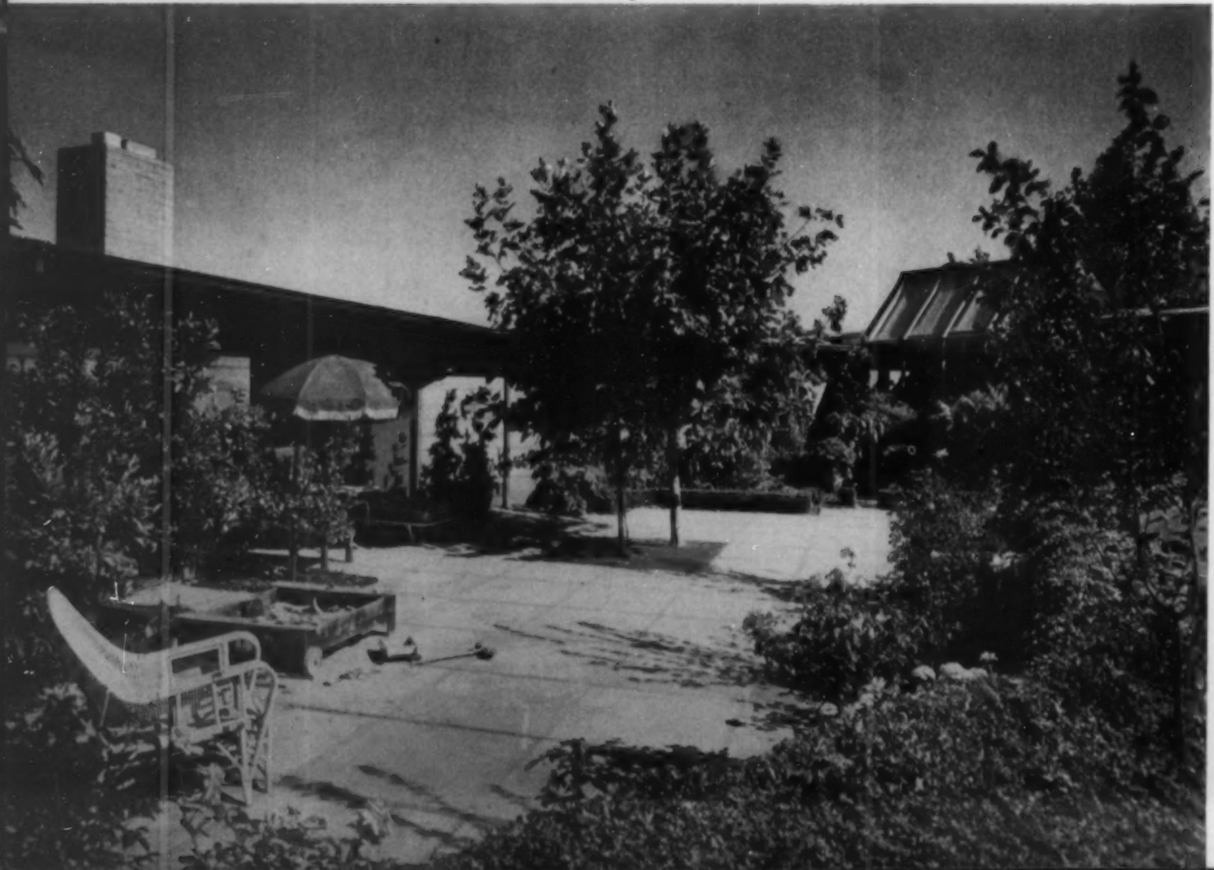
The plan arranges itself around a large private terrace at the rear, affording a pleasant contrast to the expansive view on the opposite side

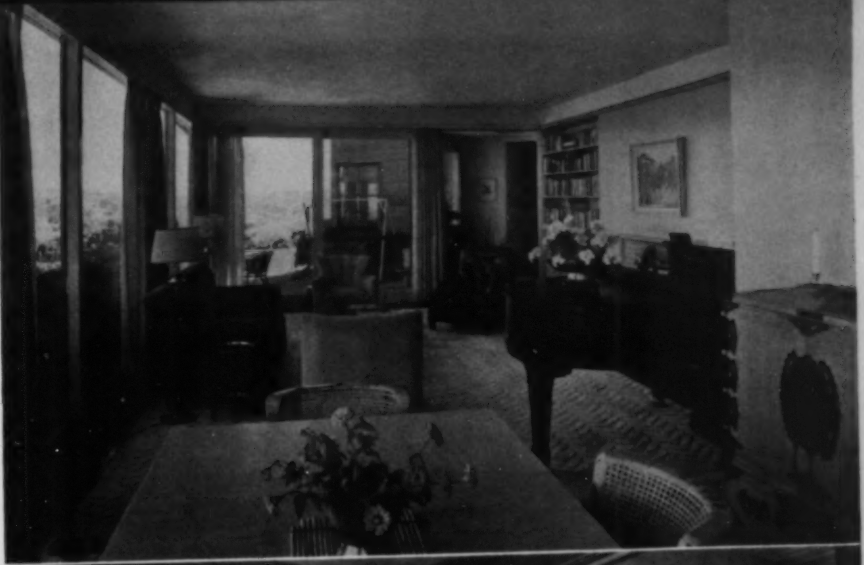

BEDROOM 13'-4" x 12'-0"
CL
CL
LIN
BATH
DARK ROOM
Flowers
TERRACE
ENTRY
LIVING 20'-8" x 15'-8"
COATS
CL
CL
DRESS'G
CL
WOOD
DINING 10'-9" x 10'-8"
HTR
STUDIO 13'-0" x 17'-0"
CL
ALCOVE
CL
CL
CL
BRK'FT
KITCHEN 15'-2" x 11'-0"
BATH
TERRACE
CL
CL
BEDROOM 12'-0" x 11'-0"
STOR.
WORK RM.
N
GARAGE 21'-0" x 17'-0"
0
5
10
15
20
25

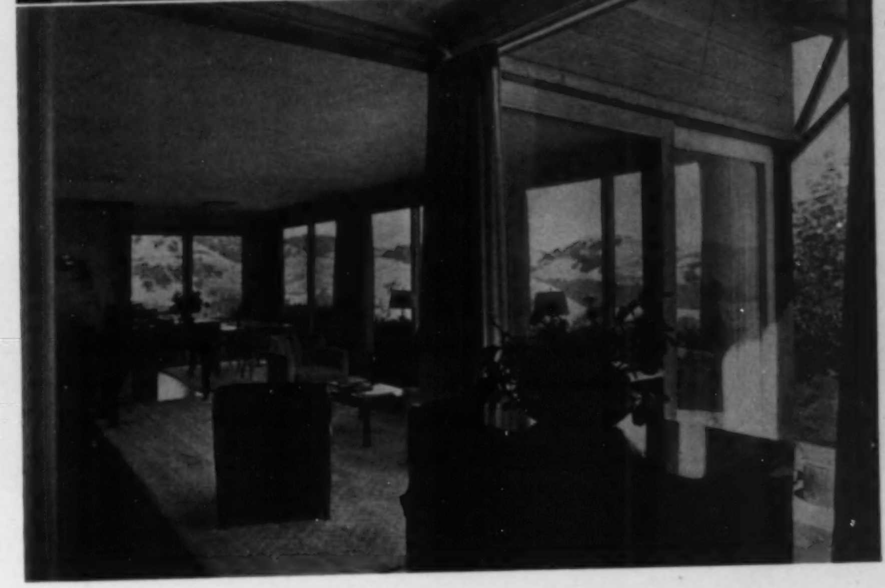




Above: a small terrace faces the sweeping view of the Contra Costa Hills and Mt. Diablo. Beyond, a wooded hill screens the larger terrace at rear. The studio, right, opens on an outdoor work space and has north skylight, also seen in terrace view below

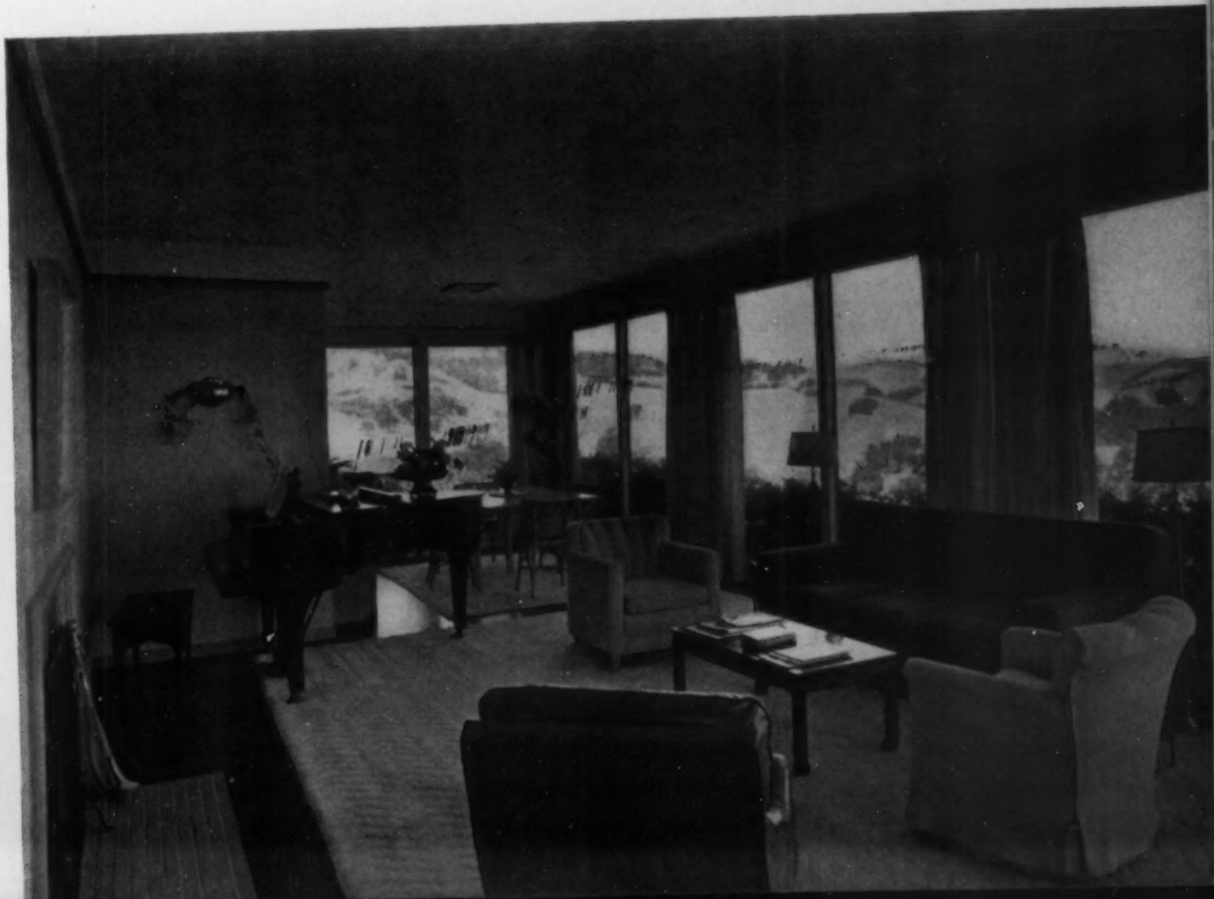


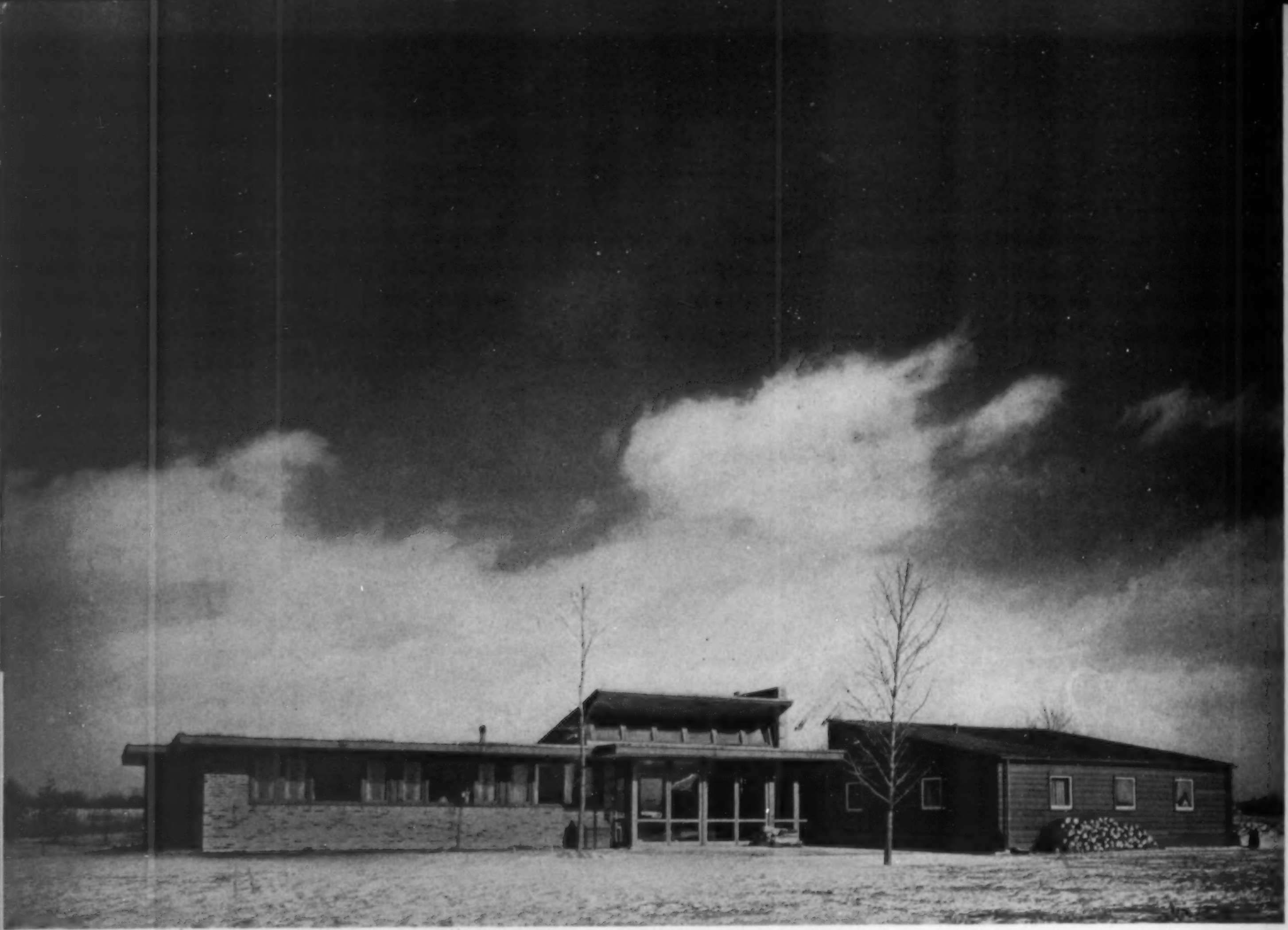




Three views of the living-dining room. Right: detail of sliding glass doors opening on terrace shown at top of opposite page. At other end of room similar doors give access to dining terrace near kitchen

Roger Sturtevant Photos



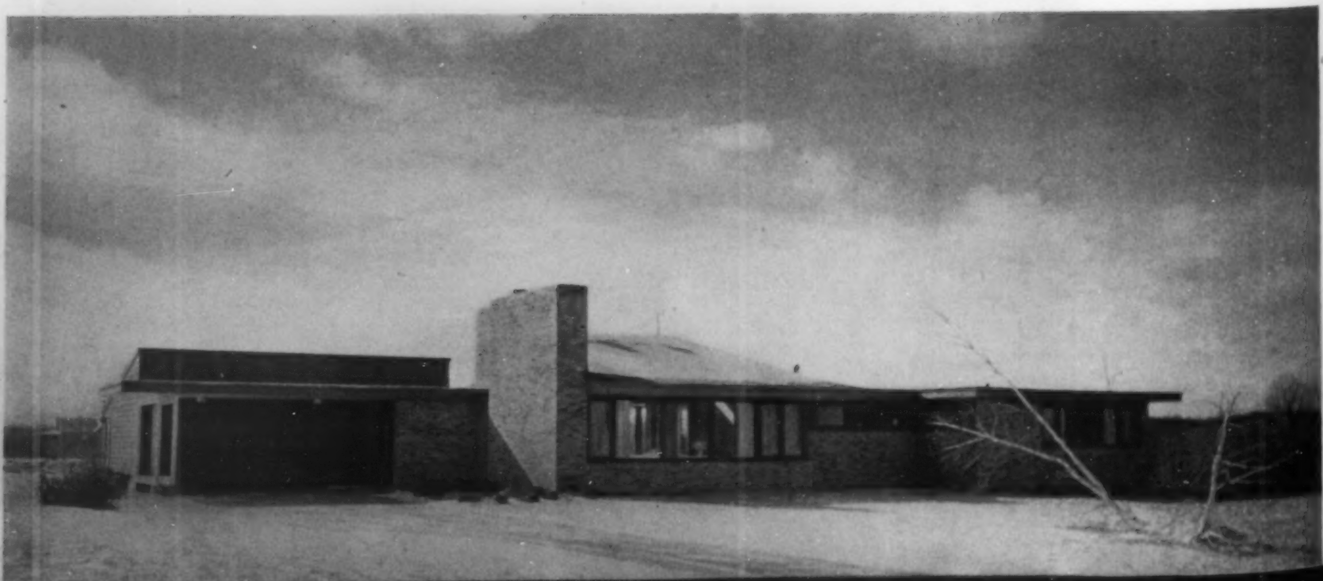


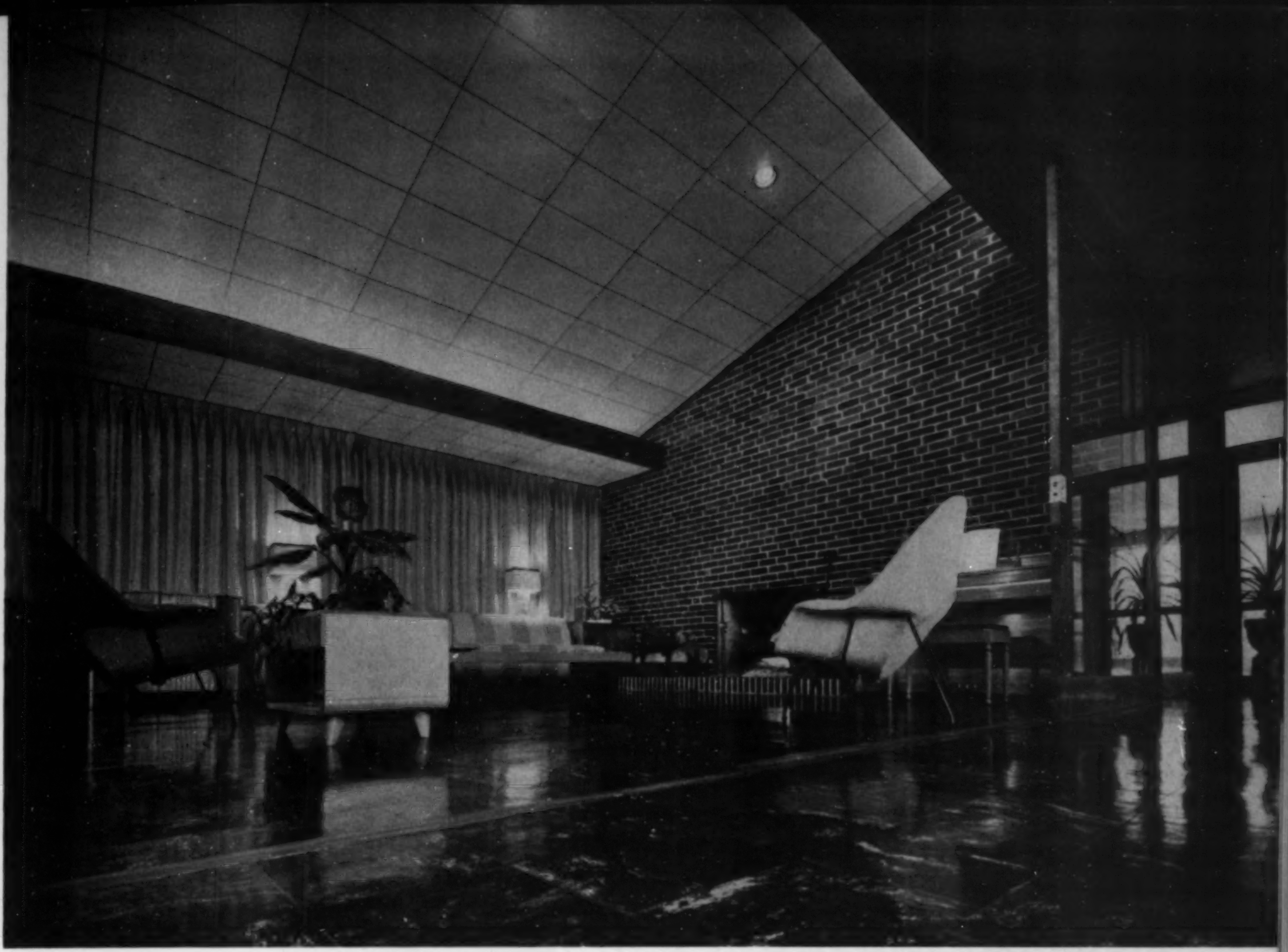
Piaget Studio Photos

PLANNED FOR THE SERVANTLESS WAY OF LIFE

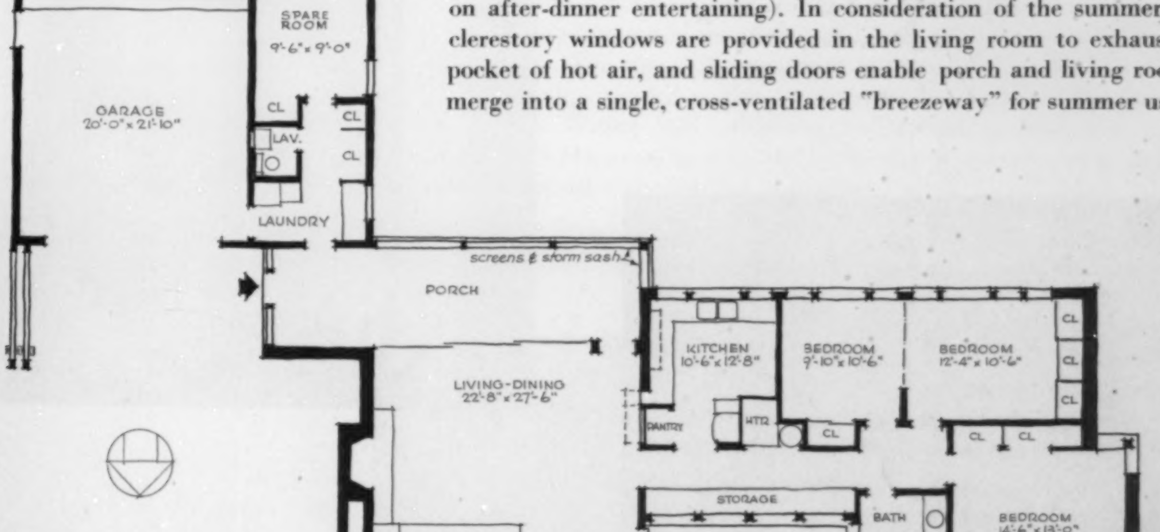
Residence in Ladue, Missouri

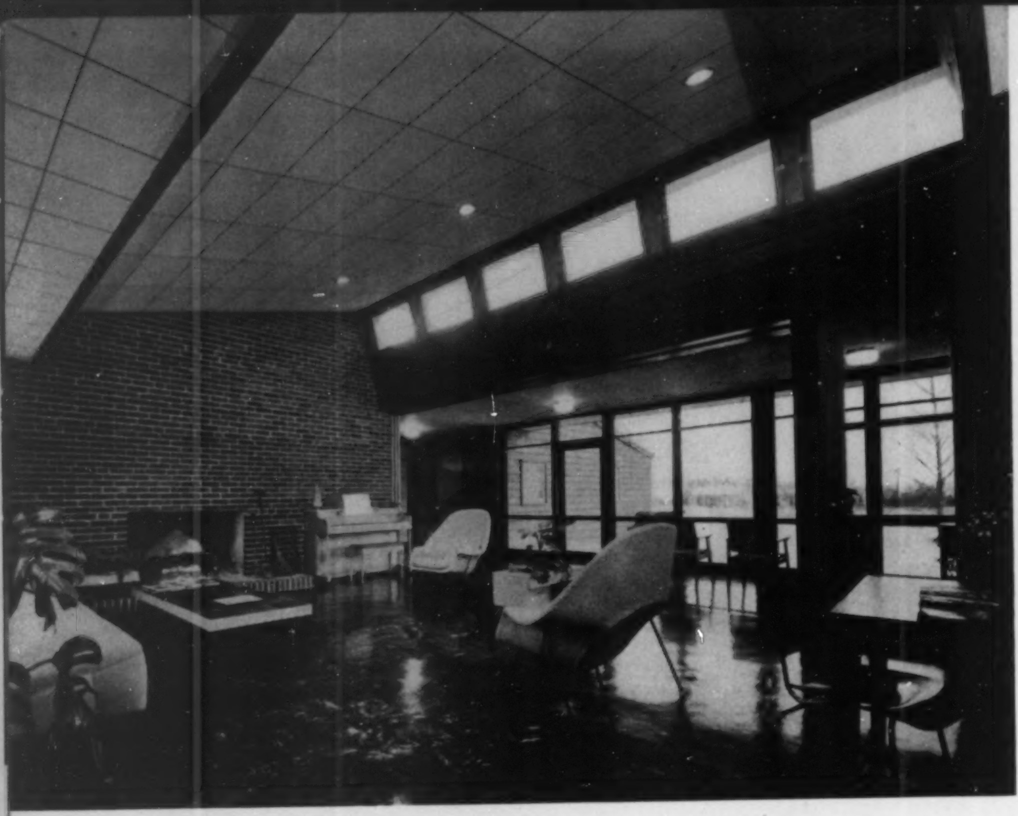
Robert Elkington, Architect





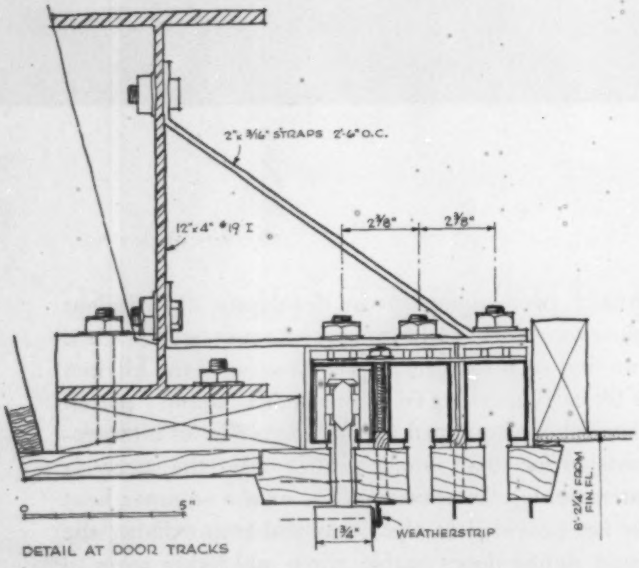
Two factors, actually, were dominant in developing this design: the owners do their own work, and Missouri summers are hot. As a result of the first we find such features as the location of the kitchen near the bedrooms for early morning convenience, the laundry placed near the entry and telephone-equipped to minimize effect of interruptions. There is provision for small dinner parties only (the accent is on after-dinner entertaining). In consideration of the summer heat clerestory windows are provided in the living room to exhaust the pocket of hot air, and sliding doors enable porch and living room to merge into a single, cross-ventilated "breezeway" for summer use.


SPARE ROOM
9'-6" x 9'-0"
GARAGE
20'-0" x 21'-10"
CL
CL
LAV.
CL
LAUNDRY
screens & storm sash
PORCH
KITCHEN
10'-6" x 12'-8"
BEDROOM
9'-10" x 10'-6"
BEDROOM
12'-4" x 10'-6"
CL
CL
CL
LIVING-DINING
22'-8" x 27'-6"
PANTRY
HTR
CL
CL
CL
STORAGE
BATH
BEDROOM
14'-6" x 13'-0"
0
5
10
15
20

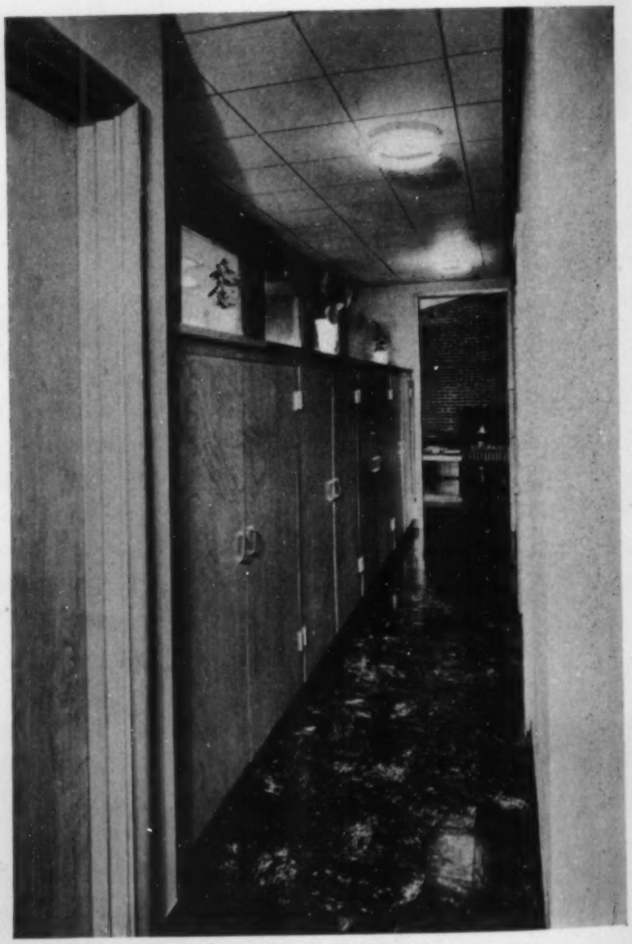


The living room is bright and spacious. Screened in summer, glazed in winter, the porch is here shown opened to the living room. Below, detail of bracket for sliding door track. Floors are asphalt tile on concrete base. The ceiling is of fibreboard. Cabinets flank hall opposite kitchen

Piaget Studio Photos


2"x 3/16" STRAPS 2'-6" O.C.
12"x 4" #19 I
2⅜"
2⅜"
0
5"
1¾"
WEATHERSTRIP
8'-2¼" FROM FIN. FL.

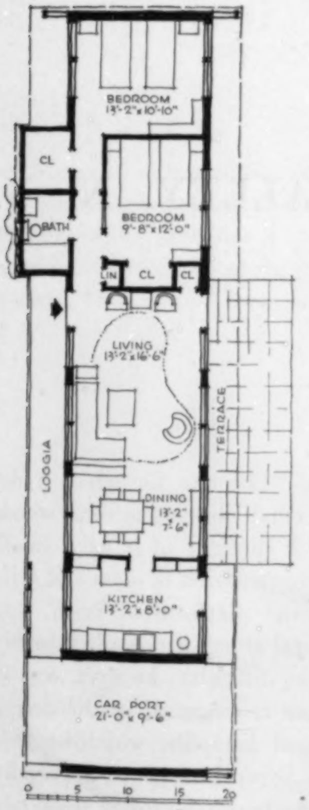
DETAIL AT DOOR TRACKS



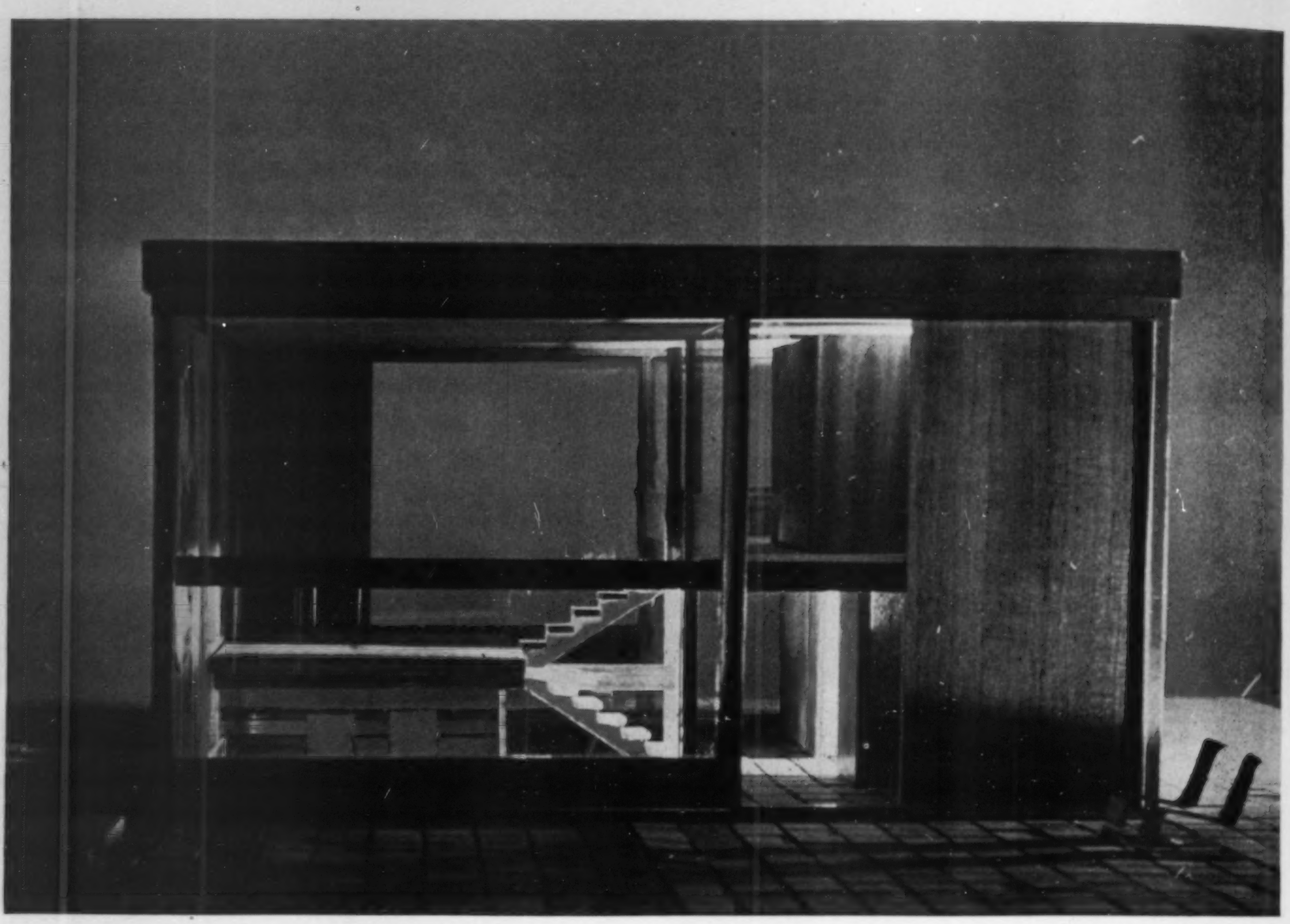
Left: folding partition opens children's room for daytime use. Guest room can be "isolation ward" in case of sickness

BUDGET HOUSE FOR GI'S

Igor B. Polevitzky, Miami; Architect


BEDROOM
13'-2"x10'-10"
CL
BEDROOM
9'-8"x12'-0"
BATH
LIN
CL
CL
LIVING
13'-2"x16'-6"
TERRACE
LOGGIA
DINING
13'-2"
7'-6"
KITCHEN
13'-2"x8'-0"
CAR PORT
21'-0"x9'-6"
0
5
10
15
20

MODULAR planning, prefabrication and the use of prefinished materials are all enlisted in this idea for a house aimed at meeting a building budget of seven or eight thousand dollars, in the South Florida region. Exterior and interior walls, designed on a modular principle, are of glazed ceramic tile; window units are prefinished and painted, and the wiring is shop-fabricated. The top of the masonry wall is tied together for lateral rigidity; angle clips welded to this tie provide the seat and attachment for precut rafters. Wiring and plumbing are accessible from the outside. Separation between areas is achieved by means of storage units delivered and set in place after the interior is finished.

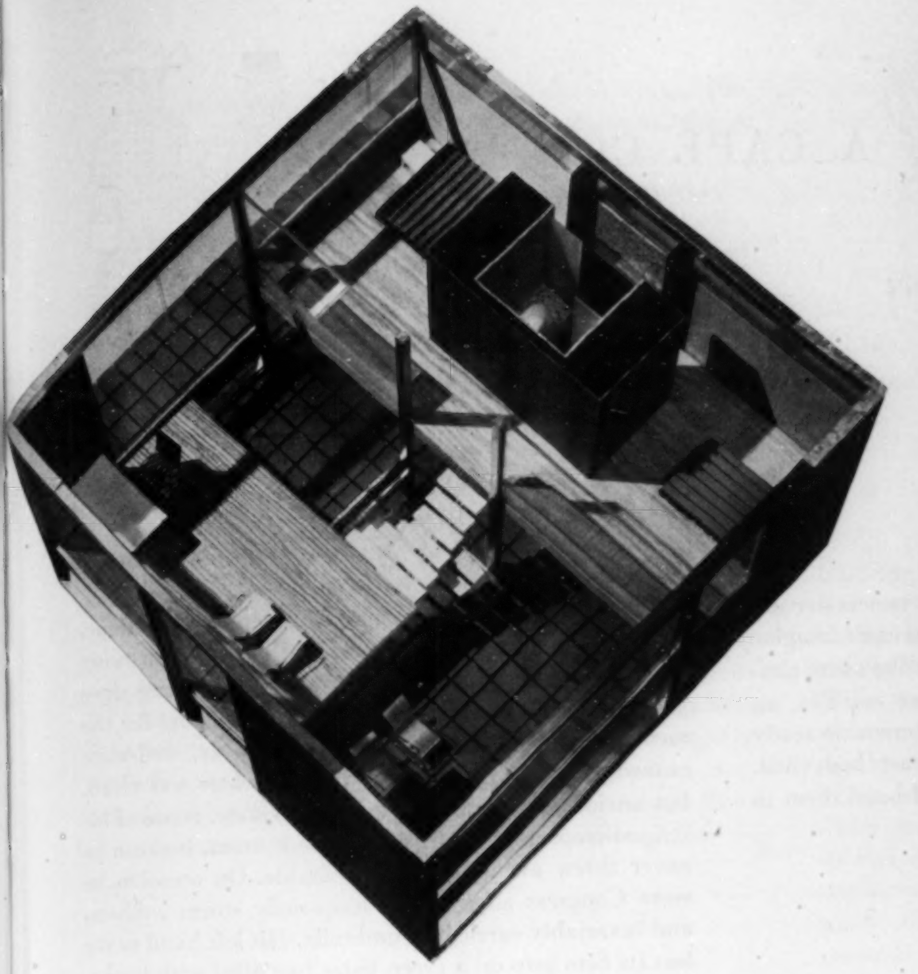


Peter Blake Photos

PROJECT FOR A HOUSE IN LOCUST VALLEY, N. Y.

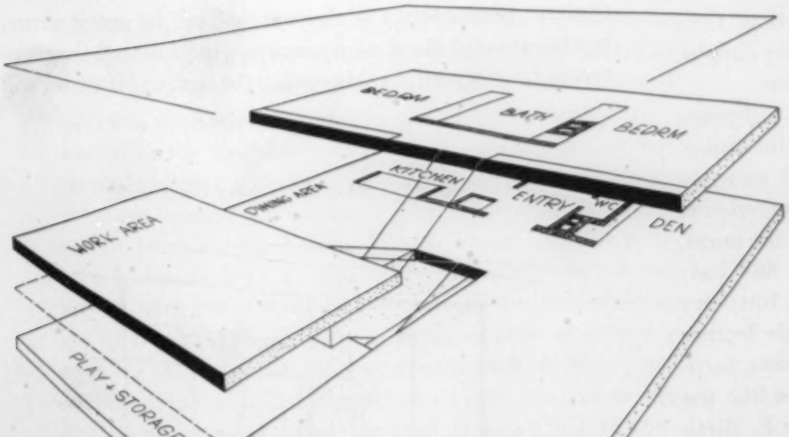
Peter Blake, Designer

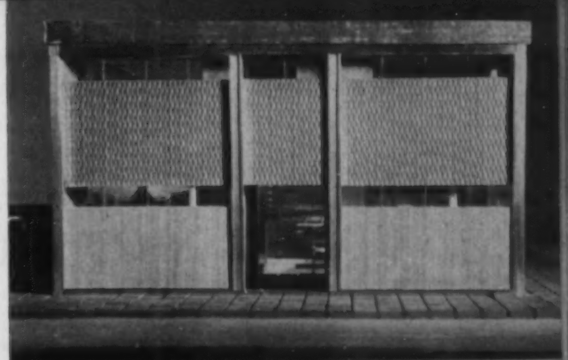
The problem consisted of a small building for the designer's own family. The house measures only 32 ft. 6 in. square. In order to avoid the usual minimal solution, different levels of activity have been created instead of the separate, enclosed cubicles which would tend to make a small house appear smaller still. The advantage of the intersecting level solution, in establishing privacy without destroying the total space-volume, is fully exploited. Although this house is to be constructed of widely centered wood posts, its materials, in a sense, are the many different space relationships which have been developed. The entrance to the house is through a small foyer, under a low ceiling, which opens up to a very high living space. This space grows in all directions as one walks around in it and, seen from different levels and angles, presents changing structural and spatial forms. Areas of great spaciousness alternate with small-scale corners of privacy, such as the little den with its fireplace. Mr. Blake says, "The site for which I designed this little house is a small clearing in some woods near Long Island Sound. I thought of it as a small, precise, rectangular little construction of glass and solid planes, standing on a raised platform of brick, and looking as little like a natural object as I could possibly make it look." His greatest difficulty, he says, was in relating the spatial freedom represented in the design to the structural and formal discipline which he feels architecture demands. In several respects, especially in the course of detailing the house, he found these two elements in his approach conflicting. The south-east elevation (top of next page) he feels is less successful on this account than some of the others; nor is he altogether happy about the proportions of some of the interior walls. In this design, however, the whole interior space is visually present to be fully enjoyed as well as efficiently used.



Walter Civardi Photo

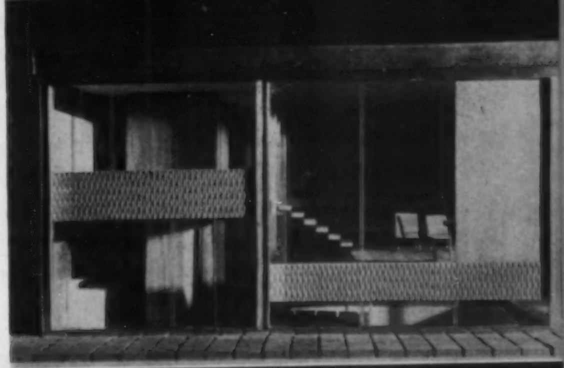
The photograph of the roofless model, above, affords the best general view of the interior arrangements. Two bedrooms and bath are above the kitchen, entry and den; the work area is at a half level lower, and beneath this — at a level still lower than that of the living room — is the play and storage space. The model, made of solid brass, plexiglass and wood, is the work of Mr. Blake and Willo von Moltke


BEDRM
BATH
BEDRM
KITCHEN
DINING AREA
ENTRY
WC
DEN
WORK AREA
PLAY + STORAGE
LIVING AREA

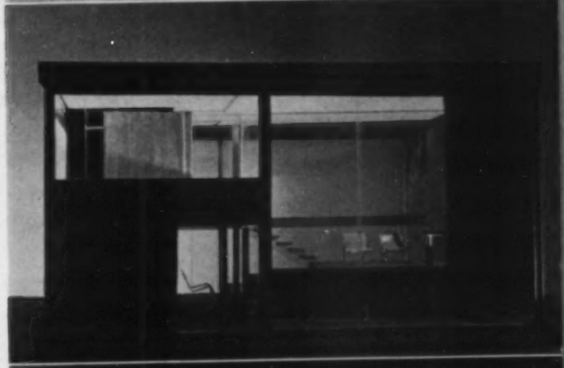


SOUTHEAST (DAY)

SOUTHEAST (NIGHT)



NORTHEAST (DAY)



NORTHEAST (NIGHT)

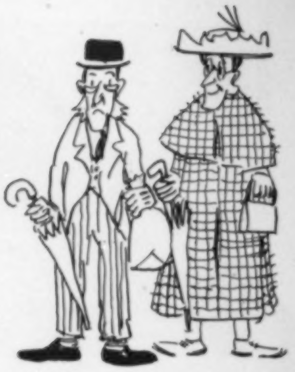
WEST

INTERIOR

CONFESSIONS OF A CAPE CODDER

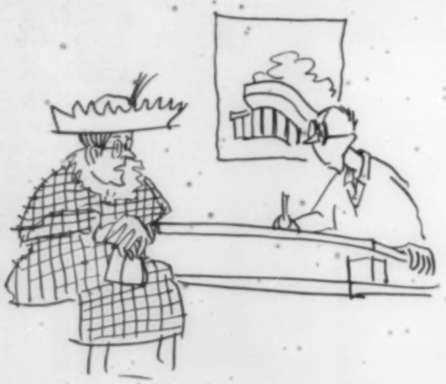
By Royal Barry Wills, Architect

Sketches by the author



If these were your clients —?

IN NEW ENGLAND the practice of architecture is so completely bound up with clients that you can't imagine the one without the other. I suppose it's the same elsewhere, but it couldn't possibly be more so. Yes, an architect simply has to have them and there is no ready device for screening out all but the least bedeviled. Ideally, he should catch them young and bend them to the concepts of his rationalizing, but somehow their formative years are always behind them when caught, and at times one wonders who's catching whom.



"Young man I want a house, not controlled environment"

Perhaps the typical New England client, subgenus Bostonian, is worth taking a look at, with the understanding that such characteristics as I shall mention are not invariably present, because even among clients there are occasional "sports" who deviate from the norm.

The ladies wear tweed suits and dolmans, and hats that have that eternal look. They are ardent but very selective joiners, and never miss a worth-while lecture nor a morning musicale. Committee work comes naturally to them, and I refer to real problem jobs like the Little Wayfarers or the Lost Adolescents. Plan E, Birth Control, or any worthy cause seeking referendum space on our ballots, will find the good ladies among its stoutest workers. They are immensely durable, like their fur neckpieces, and at seventy can do ten miles a day over Boston's bumpy sidewalks, without apparent fatigue.

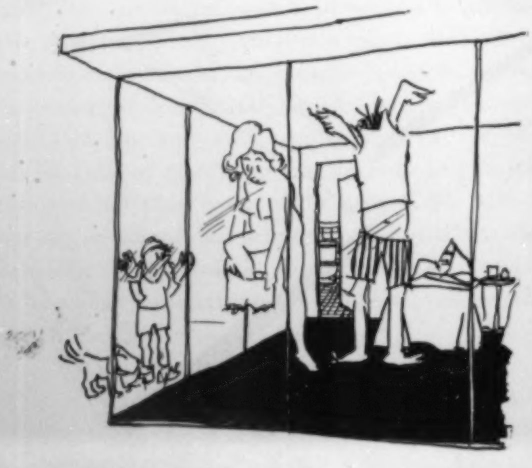
Neither the male nor female believes in throwing money around. I had an affluent old client, long since gone to his reward, who will serve as a model for the men. He wore side-whiskers, a stiff collar, well-worn cutaway, and a square derby. The necktie was clean, but ancient, and sometimes slightly askew. Some of his striped trousers were frayed at the bottom, because he never threw away anything wearable. On occasion he wore Congress shoes, very frequently storm rubbers, and invariably carried an umbrella. His left hand never lost its firm grip on a green baize bag filled with books. But that didn't mean his head was very far up in the clouds, because 'tis a fact that he personally sold apples from his one tree to neighbors at twenty-five cents a basket. By such tidy little transactions he could keep himself in pocket money and feel that nothing had been wasted.

If this picture seems fanciful, let the doubter wander over Beacon Hill almost any day in the week.

Thrift does indeed permeate them.

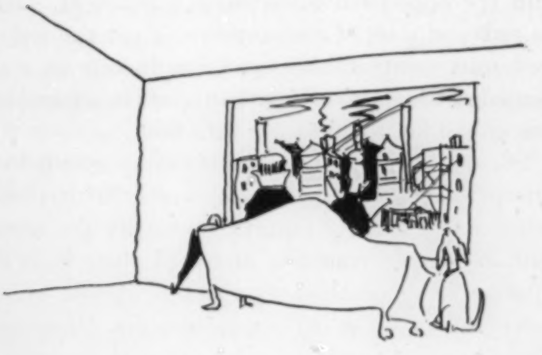
On rare occasions, a New Englander will "dip into his capital" to build a house, but with no elation, much as a drowning man parts with a life preserver. His whole conservative self deplores changes in the established system; permanency is the watchword. In architecture, he chooses stabilized solutions knowing full well that contemporary design, besides being foreign to his taste, will

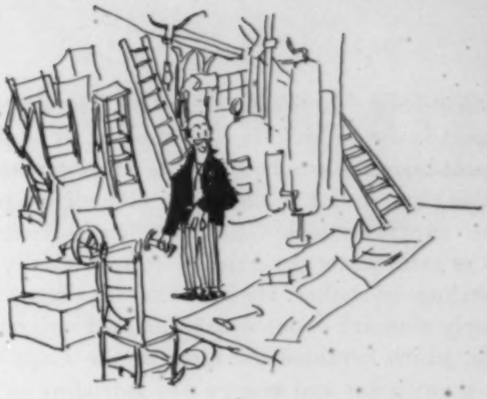
The younger set doesn't mind glass walls



vary from year to year like the fashions in *Vogue*. The styles of one decade fetch a guffaw in the next, plus a very low price.

An optimist would classify the average client as fair-minded on the obstinate side. He has an idea-full wife, usually a child or two and a flock of relatives, some of whom are downright formidable. In his background there are ancestors who have willed him furniture and oddments in varied number, and to these he has added miscellaneous gear for household furnishing, easier living, sports, hobbies or gardening. In his mind there is a catalogue of these live and lifeless hostages to fortune and it fixes his demand for space. Of course none of it is ever given the heave-ho in the interest of simplification! He is almost sure to interpret the physical appearance and location of the space in terms he and his forbears have always known and not infrequently that spells Cape Cod cottage. When the jag of sleds, porch furniture, broken chairs, ladders, garden tools and cherished cultch is uppermost in his mind he thinks of a cellar, and if you cannot provide adequate storage as cheaply above ground the cellar is as good as dug. Probably the undue affection for cellars goes back three generations to the cider barrel in the cellar of the old homestead. He has a deep-seated bent for privacy and segregation, especially where the family group is still in good order and traditional forms have not dissolved into the undisciplined expression of its members' personalities, or "careers" as they are sometimes called. So we still have a demand for dining rooms even though they are unused for twenty-two hours a day. Until the recent phenomenon of the "ranch house" on the fifty foot lot there was an almost solid preference, among houses with three or more bedrooms, for upstairs sleeping quarters. It is still rare to meet up with a warm regard for the open plan and built-in furniture. If you are starting from bleak, ancestorless scratch it's one thing, but so many of us cling to Aunt Hattie's old Boston rocker or Grandpa's roll-top desk! As a rule we're too viscous, up this way, to flow easily from center to center, preferring to walk forthrightly from the privacy of one room to another. Claustrophobia must have only a fractional incidence because, short of a view worth framing, the average client feels happier behind the chaste rectangles of his small-paned windows. If he could afford one-way glass there might be greater temptation to be at one with the troubled world, sans danger of being apprehended at ease in too informal array. But our hesitating acceptance of the "picture window" as being occasionally admissible is testimony to the slow disintegration of the New England fastness. Influences to this end include modernist example and the gush-and-rave articles in popular magazines. They are certainly chipping away at the great dam of inhibitory material standing between us and perfect intellectualized harmony with the rushing present. Another century and the dam should be reduced to a permeable talus heap.



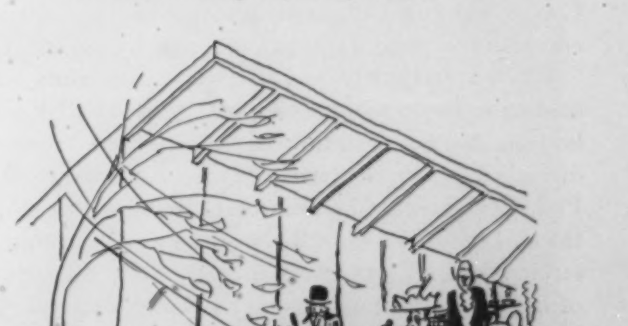


A Bostonian likes a good cellar for storage. Nothing is ever thrown away

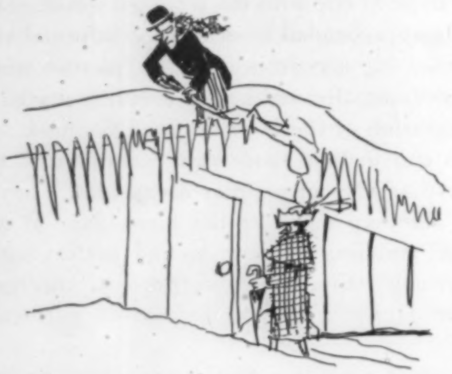
One great exception to the restrained acceptance of change has been in the mechanical division, and even the simplest Cape Codder will enshrine every last piece of labor-saving machinery that its owner can afford, even to the point where the lady of the house grows positively flabby and bored with life for lack of employment and attractive time-killing self-indulgencies that come within the family budget.

Meanwhile the architect has been making the best of it, balancing the program, the budget, and the client's tenacious proclivities for this and that. Try as he will to attune himself to the persistent hum of progress,

The New Englander does not take readily to outdoor living especially toward fall

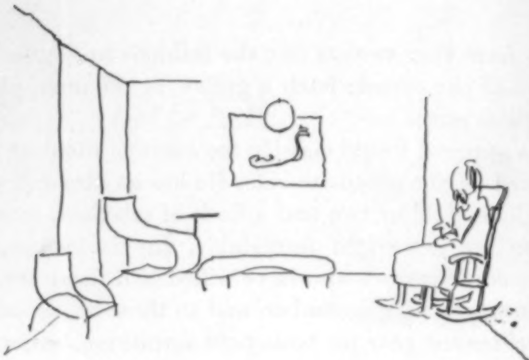


certain awkward facts keep intruding. The simplest and cheapest house to build is clearly going to be the most compact house. It's to be set up in a region with no discernible climate but riddled with difficult irregularities in the weather which take shape as hurricane, hail, snow or rain, directed vertically or horizontally against his package of shelter. He finds that his clients are particularly sensitive about weather. New England, for example, which heralded the birth of the Cape Codder, finds many a hot and muggy day intruding in its normally lovely summers, and raw and biting cold, with snow, is the rule in winter. Snow may pile up three feet deep on a flat roof there, and winds of one hundred miles an hour velocity not infrequently blow fine snow right through shingles which are water-tight, and rain through the putty of windowpanes. Certainly its integument must be of the best completely proven types of material that come within the budget. By this same yardstick the roof has got to be pitched in at least one direction, if it's to give the least amount of trouble year in and year out. The simplest windows to install, and the ones found most generally adaptable to storm and subzero conditions, are plain double-hung sash. If there is only one chimney it comes naturally near to the center of the house, for any heating man will tell you that a furnace should be located amidships. Then, too, down drafts are much affected by side and end chimneys in this neck of the woods. It is not mere willfulness that has given the Cape Codder and its more pretentious New England cousins their present form as true regional architecture.



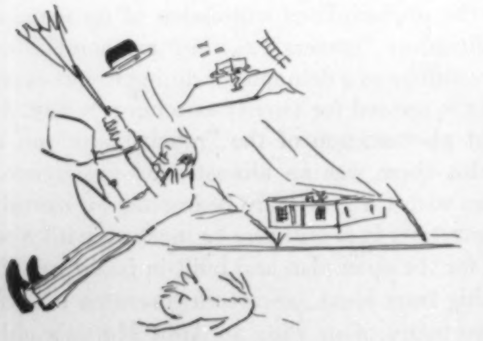
New Englanders don't like flat roofs

When I started to practice, the professional world seemed to be at peace with itself, at least as far as my horizon, and not until the early Thirties was its serenity disturbed by brawling between the Five Orders and the Pipe Columnists. My immediate impulse was to give the new thought a whirl, to check its virtues against the stridency of its protagonists. So we did a fair number of houses in the contemporary manner and still get a big kick doing them on occasion, but we never became rabid enough to wage an unholy war against the inherent desires of our clients. It didn't seem that important, especially as we could, and still can, better our costs through use of familiar materials used traditionally. We can heat and humidify them to the queen's taste, accouter them to the mechanical hilt and present them to the world through a picture window; we can build their house on a concrete slab replete with pipes and still leave them happily within the indigenous design they prefer.



Among those of us old enough to have known peace among the architects there is still an urge to retain that blessed status, and perhaps we'd even connive a little with the opposition towards its attainment. Couldn't we arrive at a set of compromises (if you can imagine a modernist compromising) and concentrate on a subtle campaign which takes cognizance of the clients' innate fear of hell fire to pull them into line?

The spirit of the age is palpably away from individual enterprise and choice and immeasurably favors planning-living as evolved by experts. Naturally the womb-to-tombists cannot complete and hold their master plan without being occasionally ruthless against persistent outcroppings of the old dog-eat-dog era. Of course, the whole business would be a lot easier if we could have just a little direct revelation to certify the validity of the dogma. Without it, a Messiah has tough going in New England.



New England is riddled with difficult irregularities in the weather

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

M. I. T. BUILDS SOLAR-HEATED HOUSE

Test house combines solar with electric auxiliary heat to minimize installation expense

It has long been an open secret that M. I. T. was seriously researching the age-old idea of using solar heat for space heating. The study has now arrived at the point of completion of the first occupied test house.

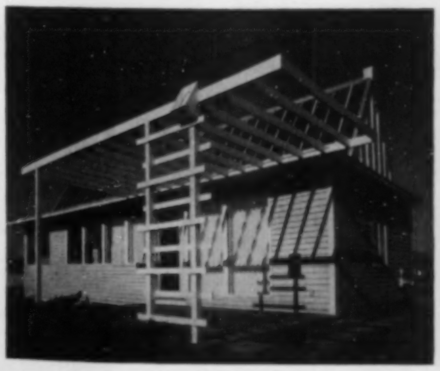
The house is basically a compromise between theory and practice. Probably nobody ever doubted that a house could be heated entirely by direct solar energy. The conflict between idea and reality has been in the size and expense of the necessary gadgetry to collect heat and store it against the rainy days. So this house does not attempt an installation large enough for 100 per cent solar heat; the approach was rather to do what seemed reasonable with the sun's energy, and supplement that with auxiliary electric heating.

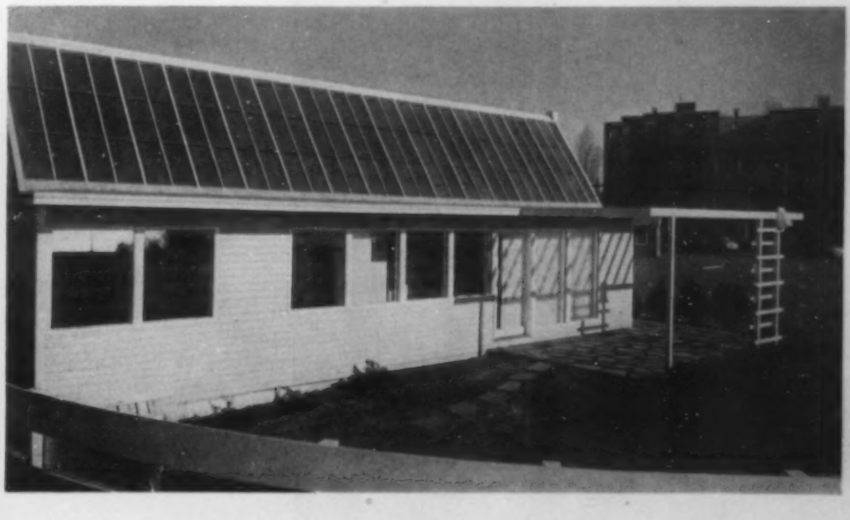
The house is in the Boston area, which is considered to be about the northern limit for solar space heating. It is the latest development of M. I. T.'s Solar Energy Research Project, endowed by Dr. Godfrey L. Cabot of Boston.

This house uses water as the heat storage medium, and the necessary size of the water tank is a limiting factor, as well as the size of the heat collector plate. The tank here holds 1200 gal. The electric heat is easily added to this system by the simple means of introducing two 3.5 kw immersion-type heaters in the water storage tank.

The heat collector is of the flat-plate type (parabolic, conical and other shapes have been studied), as the flat form seems generally the most practical. It consists of a blackened metal sheet behind two sheets of glass, the assembly tilted toward the winter sun.

If we could put a heat collector perpendicular to the suns rays somewhere outside the atmosphere, there would be about 430 Btu per hr. per sq. ft. available outside the glass. But by the time the solar radiation has passed through





the dust and water vapor of the atmosphere, some of the radiation has been absorbed and diffused, letting a little over 300 (350 max.) Btu per hr. per sq. ft. through. Some of the diffused radiation is still picked up by the heat collector which accounts for some heat collection even on cloudy days.

In order that a maximum amount of heat might be collected during the peak of the heating season without the roof being too steep, an angle of 57 degrees with the horizontal was chosen for the tilt of the heat collector.

The optimum collector tilt for house heating depends on geometrical limitations as well as the economic consideration for the solar unit. From the standpoint of heating alone, the optimum collector tilt is that which will allow the heating system to operate with a minimum of fuel from an auxiliary unit; or that allowing the minimum size of storage tank for an independent solar heating system. From an architectural standpoint, roof angles greater than 45 degrees probably would not be economically justifiable.

To get the maximum amount of collection during December and January at Boston (Cambridge) would require an angle of about 65 degrees (sun's rays perpendicular to the collector at solar noon).

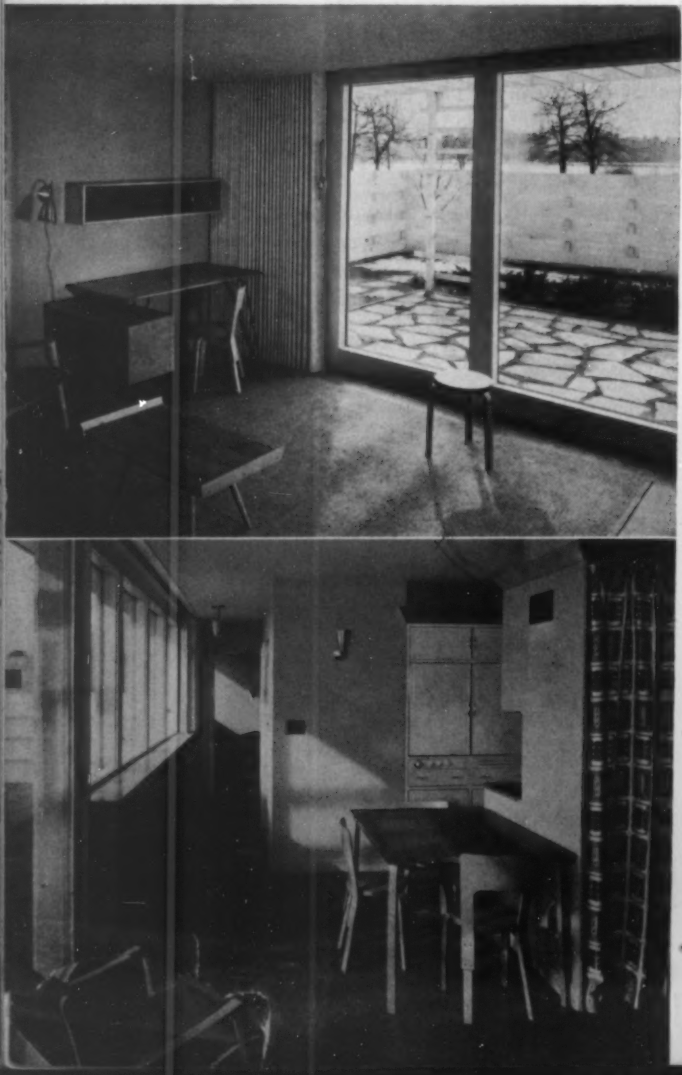
With an angle of 57 degrees, the rays will be perpendicular to the collector at the middle of February and the beginning of November. A variation of plus or minus 8 degrees from the 57 degree angle makes little difference in the heat absorbed and takes in a period from the middle of October to the beginning of March, the greater part of the heating season.

According to directors of the program, the tilt chosen favors solar energy collection and appears to be within reasonable architectural construction. A convenient rule of thumb for figuring the collector tilt for different sections of the country is the sum of the latitude and 15 degrees. (Cambridge is 42° 22′.)

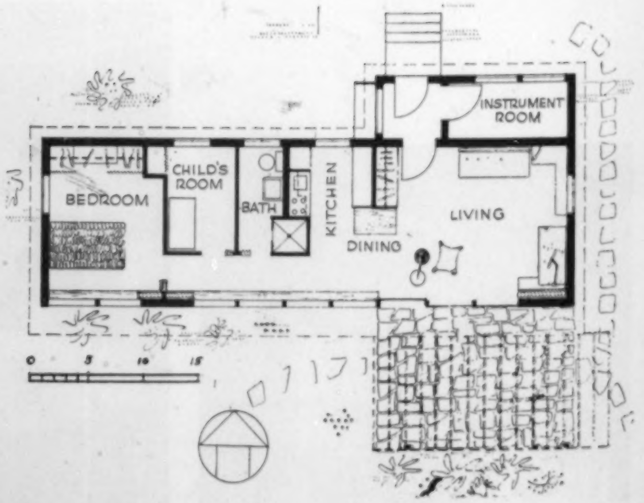
The heating system is comprised of 400 sq. ft., net, of heat collector surface which makes up the south side of the peaked roof, an attic storage tank, a radiant ceiling panel, two circulating pumps and controls. The collection and heating unit is a closed-cycle system at atmospheric pressure; no outside air or water is introduced after operation has begun.

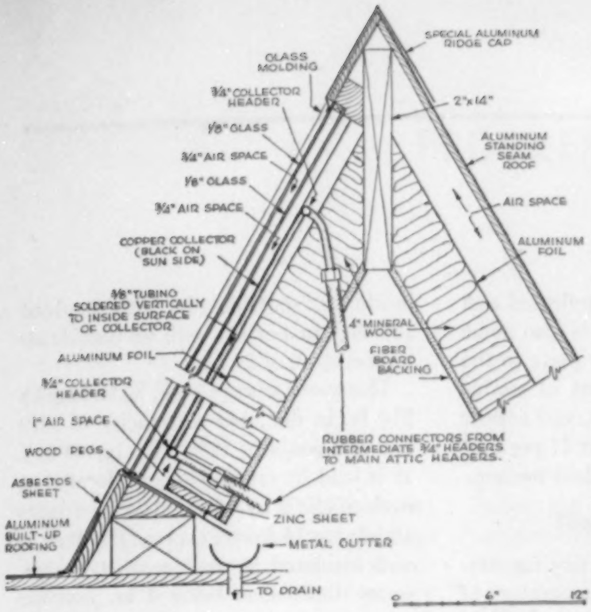
The collector area was determined by letting the seasonal heat loss equal the solar input during that time, the solar input being taken as the direct radiation plus 5 per cent additional assumed to be reflected from the aluminum roofing on the overhang.

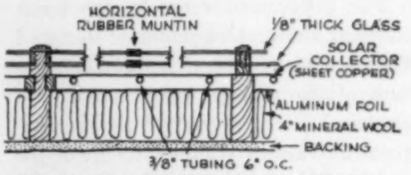
(*Text continued on page 138*)



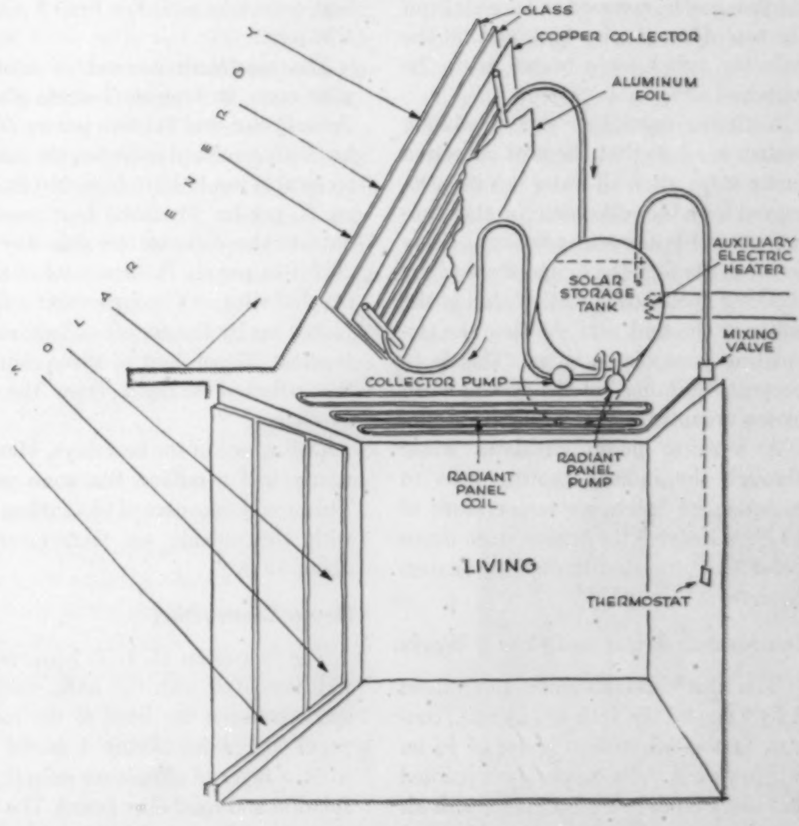
Solar gain through the large glass area of the south wall compensates for the heat loss to the outside. At night folding fabric curtains, as seen in the upper photo, can be pulled in front of the glass to give the occupants privacy and reduce heat loss. A grille for fresh air can be seen above the table in bottom photo



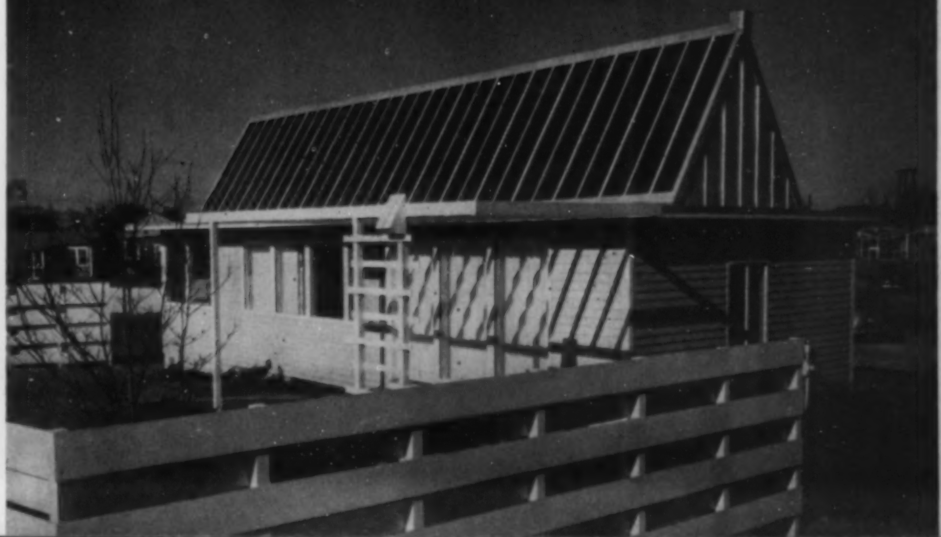

SPECIAL ALUMINUM RIDGE CAP
GLASS MOLDING
3/4" COLLECTOR HEADER
2"x14"
1/8" GLASS
3/4" AIR SPACE
ALUMINUM STANDING SEAM ROOF
1/8" GLASS
3/4" AIR SPACE
AIR SPACE
COPPER COLLECTOR (BLACK ON SUN SIDE)
ALUMINUM FOIL
3/8" TUBING SOLDERED VERTICALLY TO INSIDE SURFACE OF COLLECTOR
4" MINERAL WOOL
FIBER BOARD BACKING
ALUMINUM FOIL
3/4" COLLECTOR HEADER
1" AIR SPACE
RUBBER CONNECTORS FROM INTERMEDIATE 3/4" HEADERS TO MAIN ATTIC HEADERS.
WOOD PEGS
ASBESTOS SHEET
ZINC SHEET
ALUMINUM BUILT-UP ROOFING
METAL GUTTER
TO DRAIN
0
6"
12"


HORIZONTAL RUBBER MUNTIN
1/8" THICK GLASS
SOLAR COLLECTOR (SHEET COPPER)
ALUMINUM FOIL
4" MINERAL WOOL
BACKING
3/8" TUBING 6" O.C.

DETAIL OF SOLAR HEAT COLLECTOR


GLASS
COPPER COLLECTOR
ALUMINUM FOIL
SOLAR ENERGY
AUXILIARY ELECTRIC HEATER
SOLAR STORAGE TANK
MIXING VALVE
COLLECTOR PUMP
RADIANT PANEL PUMP
RADIANT PANEL COIL
LIVING
THERMOSTAT

The diagram, right, shows the main features of the M. I. T. solar heating system—how the heat is picked up, stored and distributed. The heat collector, detailed above, traps about 37 per cent of the solar energy hitting the glass. An opening at the bottom lets out water in case the glass gets broken. In the photo, Edmund Czapek is examining a flow meter in the attic; note the heavy insulation on a line leading to the storage tank



Another view of the house with "sun-measuring" gadgets called pyrheliometers evident on the trellis and peak (right) of the roof. They measure the intensity of solar radiation outside a collector tilted at a 57 degree angle or oriented vertically

Whenever the temperature of the collector is 5 degrees above that of the water in the storage tank, a pump automatically circulates water from tank to roof collector and back. Whenever the temperature of the water in the collector goes below that in the tank, the flow of water is cut off and the copper tubes in the collector are pumped full of air to prevent freezing damage. For heat collection, water is pumped from the bottom of the tank and returned to the top. Since a non-reversible pump is used, diverting valves are necessary so that the flow can be reversed to take air from the top of the storage tank and fill the collector tubes when water is to be withdrawn.

A timing control in the circulation system is set so that the heat collection pump stops when all water has been removed from the collectors. Another timing control is used to provide a delay between the time the temperature of the collector goes above or below that of the water in the tank and the time the circulating pump is actuated. This is to prevent "hunting" of the system when clouds are intermittently hiding the sun.

A separate pump circulates water through the radiant heating coils to maintain an inside air temperature of 68 F. Whenever the temperature drops below 65 F, the electric auxiliary heaters operate.

The Heat Collector and How it Works

The heat collector units, 15 of them 3 by 9 ft, and the 16th 1½ by 9 ft., consist, first of all, of two layers of ⅛ in. window glass and a copper sheet painted flat black on the absorbing side, with air spaces between each. (See details.) Copper tubes are soldered vertically to the back of the copper sheet and conduct about 10,000 lb. of water each hour to pick up the heat absorbed by the copper sheet. The back of the collectors are insulated by aluminum reflective insulation, 4 in. of rock wool and a layer of fiber board.

Glass is quite transparent to the short wave radiation that comes from the sun. When the black copper sheet absorbs these rays and converts them into heat, it radiates longer infra-red rays which do not pass easily through glass. Thus heat is trapped by the collector. Not all of the solar radiation is transmitted through the glass; part is reflected and part absorbed. And there is also some heat lost from the collector plate to the outside. In all, the amount of usable heat picked up by the blackened copper sheet is reported to be about 37 per cent of that striking the outer glass surface.

How Much Heat Is Obtained?

On February 17, a good day for sunshine with an outside air temperature of 24 F, there were 340,000 Btu stored in addition to the heat required to make up the losses of the structure during the heat collection period — from 9 a.m. to 4:20 p.m.

The maximum amount of heat, at solar noon, striking the outside glass of the collector was 314 Btu per sq. ft. per hr.; with a vertical collector, the amount receivable would have been 200 Btu per sq. ft. per hr. The total heat available outside the collector on this day was 2050 Btu per sq. ft. or a total of about 820,000 Btu. Of course the amount picked up by the copper collector sheet is about 37 per cent of this value plus the reflected sunlight from the roof overhang.

During one of the best days, March 2, nearly half a million Btu were stored. This would take care of two sunless days with the outside air temperature at about 30 F.

House Construction

The four-room M. I. T. house is very well insulated with the walls, roof and space between the back of the radiant panel and attic having 4 in. of rock wool, a layer of aluminum reflective insulation and rigid fiber board. The floor, topped with asphalt tile, is built on wooden piles and has a layer of aluminum foil between the subflooring and the wood soffit.

All windows on the south side of the house are triple glazed, except for one panel which serves as a sliding door and is double glazed. The remaining windows on the other sides of the house are double glazed.

The area of glass on the south side was calculated by equating the seasonal heat loss and the solar gain during that period.

The heat loss of the living areas with no curtains drawn is 287 Btu per hr. per degree temperature difference between inside and outside air. This is about 13,800 Btu per hr. with an outside air temperature of 20 F.

The water storage tank, 36 ft. long by 2½ ft. in dia., has a capacity of 1320 gal. and contains 1200 gal. (10,000 lb.). It is held by cradle supports located at each of the 2 by 10 in. attic floor joists which are 14 in. on center. The tank is well insulated by rock wool, the minimum dimensions being 4 in. and the maximum 12 in.

All of the ceiling area is used for the radiant panel. Three-quarter inch copper tubing is formed into a series of sinuous coils and spaced on 9 in. centers.

The instrument room in the house contains automatic equipment to record the intensity of solar radiation, temperature of the storage water, amount of electrical energy consumed, air temperatures at various points throughout the inside of the house and the outside air temperature.

Designers of the new M. I. T. house decline to estimate the cost of a complete solar heating system for the average New England house. The present design does not include expensive oversize equipment to provide capacity for extreme cold spells and long sunless periods. Professor Hoyt C. Hottel of the M. I. T. department of chemical engineering has stated that it cannot be presumed that solar heating will be economically feasible in a climate as cold as that of New England, but results should serve to indicate under what conditions of climate solar heating would be competitive with fuel oil, gas or coal.

The house is occupied by a student engineer, his wife and baby, so that readings of the automatic instruments will provide figures for heat loss and storage requirements under typical dwelling conditions.

The solar energy work is under the supervision of a steering committee with members from departments of architecture, building engineering and construction, mechanical engineering and chemical engineering. The construction of the house and the research directly associated with it are directed by Edmund L. Czapek, research associate in architecture. The architectural design of the M. I. T. house was done by J. Frank Haws, a student in the department of architecture.

PROGRESS IN HOUSE HEATING EQUIPMENT

By Clifford Strock, Editor, Heating and Ventilating

Two years ago on these pages the writer reviewed the postwar developments in house heating and air conditioning. In that review the notable point was that beginnings were being made in certain new and advanced ideas. Since that time surprising progress has been made; in certain directions where heretofore the thinking was rather vague, ideas have assumed tangible shape in the form of new equipment. It is in connection with this new equipment and the refinements of older devices that we find the real advances since 1947.

THE FUEL SITUATION

There is basically little change in the fuel situation as compared with two years ago. Coal and oil are at the present time easily available, while manufactured gas in many regions remains restricted for new house heating applications.

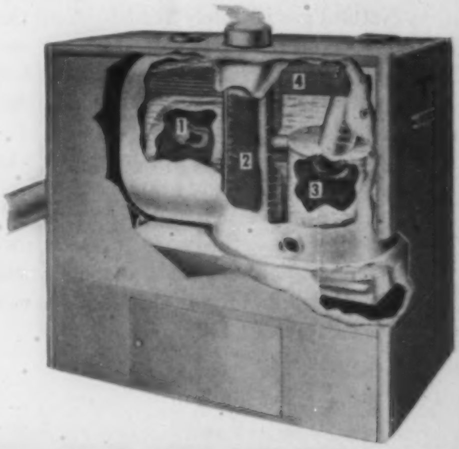
Oil

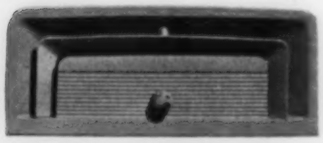
Oil, scarce for several years, is now in long supply to the point where appreciable price reductions were made in some areas early this year. This is due to some extent to the mild winter in the northeastern quarter of the United States where fuel oil for house heating is highly popular, and also to increased refining and distribution facilities. Oil refinery and producing companies continue to point to large oil reserves, while conservationists of natural resources, such as Secretary of Interior Krug, view with apparently sincere alarm the depletion of our oil and deplore its use for generating heat (thermodynamically the lowest form of energy) when we should be saving this fuel for aviation gasoline and other highly important uses.

In this, coal producers of course agree and point to the vast supply of coal still underground, and it must be admitted that there is something to be said for this viewpoint. It is perhaps typical of the times that such a seemingly simple thing as deciding on what fuel to use for home heating should be mixed up with matters of national policy on a pretty high level.

On the other hand, one of the Interior Department's division heads was quoted recently as saying that "We are in no danger of running out of oil for many, many years. . . . In any event, there are excellent prospects for new oil dis-

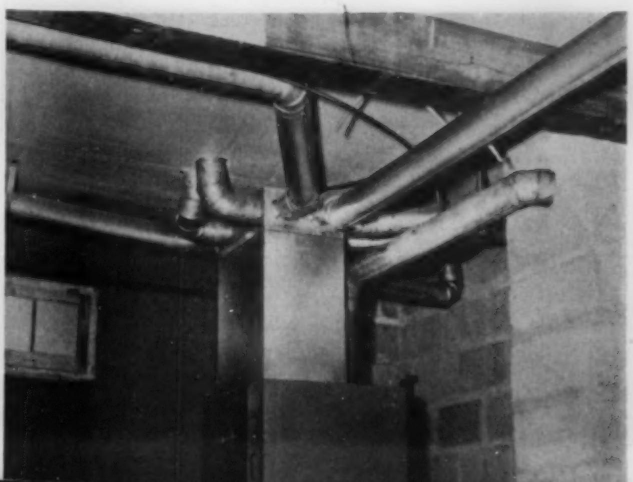
Much of the development work in heating equipment has been in getting more heat out of fuels, smaller and more compact heating plants, and lower installation costs. The warm air system (below, left) uses precut lengths of 4-in. stovepipe in place of rectangular ducts to cut costs. Air at 150–175 F is forced in a fan-like pattern in front of walls by the special grille shown. The compact boiler at right burns anthracite pea coal rapidly in a small combustion area to get a reported 80 per cent of the heat out of the coal. Boiler sections labeled are: (1) fan swirls combustion gases against heat transfer surfaces, (2) fly ash separator, (3) firepot and (4) domestic hot water

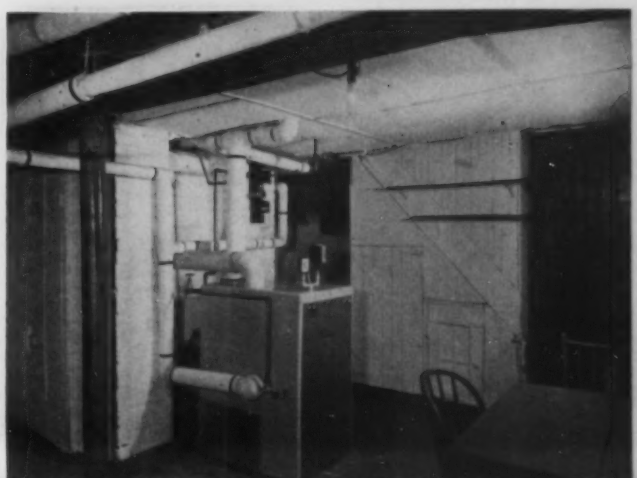


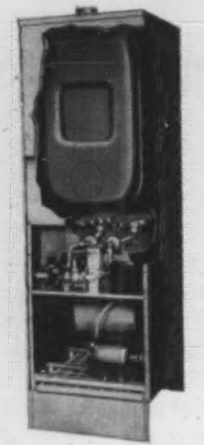


General Electric Co.

Above: The Bethlehem Foundry & Machine Co. Below: Anthracite Institute







Perfection Stove Co.

The necessity of utilizing floor space as much as possible in the small house has stimulated the manufacture of boilers and furnaces in space-saving, vertical forms

coveries in the U. S. . . ." And a vice president of Gulf Oil concludes that "The oil industry has solved the problem of shortages by its gigantic program for improvement of refinery and other facilities. . . ."

Gas

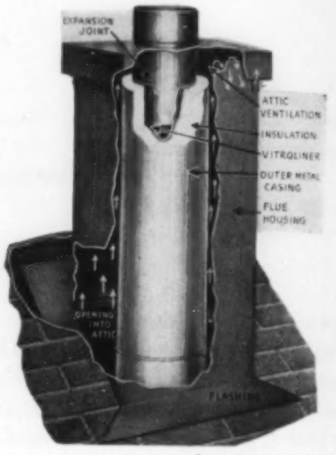
Gas is in a little different position. Natural gas is widely available, and the important regions where it is not are being rapidly reduced in number. Los Angeles has been connected to gas fields by a 1200-mile pipe line; work has begun on an 1800-mile line from Texas to New York City, and a number of other lines are proposed or under construction. In such cases as the two mentioned, however, it is doubtful if the consumer will benefit by lower rates; rather, he will benefit by availability.

It was reported recently that manufactured gas utilities are able to take new heating business in only 25 per cent of the larger cities; the same source reports that of the gas utilities that have had no postwar rate increases, 84 per cent have filed for increases.

Synthetic Fuels

Production of oil and gasoline from coal and oil shales has passed from the realm of speculation to that of actuality. The Bureau of Mines experimental oil-from-oil-shale plant at Rifle, Colo., is producing 50 barrels a day, and several additional retorts are being added. In Missouri the Bureau has under construction a pilot plant to produce 200 barrels of gasoline per day by hydrogenation of coal. Coal gasification underground is still being studied in Alabama, with the second project having begun early in March, and in West Virginia gasification of pulverized coal is being accomplished on a laboratory scale. Other synthetic fuel developments include the making of alcohol from agricultural residues in Peoria. The American Gas Association has developed a process for making gas from low cost oil, and oil with a residual carbon content of 13 per cent has been successfully so processed in Baltimore.

All this is not beside the point to the architect. The foregoing indicates that we are in the midst of revolutionary developments and perhaps sharp changes in fuel utilization practices, changes that will surely come about quickly in case of war, and at any rate will eventually affect house heating practice, and that we are still undergoing price changes that may substantially shift the relative status of the various fuels.



Condensation Engr. Corp.

Prefabrication has even been adapted to the chimney. The "packaged" unit shown here is supported entirely by the roof and ceiling; it requires no brick work

FUEL-BURNING EQUIPMENT

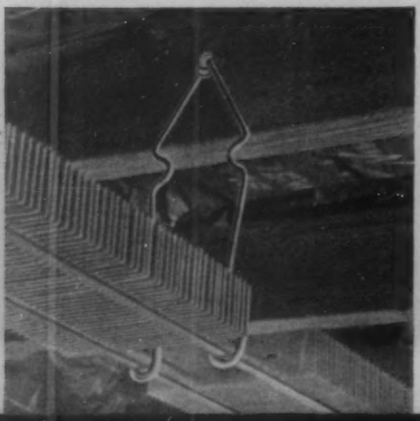
Multi-Fuel Heaters

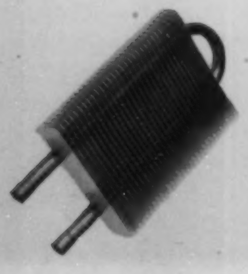
But the more immediate effect of the somewhat uncertain fuel situation has been that fuel-burning equipment designers have turned their talents toward producing boilers and furnaces which can be converted quickly from one fuel to another — or back again, if necessary.

For example, Midwest Research Institute has developed a unit for burning both oil and gas — the latter in mild weather, oil for peak loads. Thus the gas utility distribution line could be fully utilized for many months in the year, while the investment in the pipe lines would be minimized since oil would carry the peak loads. The switch-over from oil-to-gas and back is automatic under control of an outside thermostat. Gas is burned in conventional manner, but the oil burner is built into and around the gas burner so that many parts are interchangeable.

One combination coal and oil boiler recently developed has separate combustion chambers for the two fuels. Coal firing is by hand through one end, the oil burner being at the opposite end.

Kritzer Radiant Coils





These prefabricated, finned radiant heating coils heat up the air spaces behind ceilings, walls and floors. After soldering, coils are pushed into upper hanger position (left), with fins between joists

Another combination boiler unit has a large combustion space suitable for oil, gas, or stoker or hand fired coal, and is available in either steam or hot water types.

A warm air furnace has been designed to accommodate hand firing, stoker, oil or gas firing. To convert from one fuel to another, unnecessary parts are removed and a conversion kit of parts required, including burner for the other fuel, is applied.

Another combination unit recently has been placed on the market, not for use with different fuels, but designed to meet different conditions. These conditions are those existing when relatively low temperature hot water is desired for radiant heating and at the same time higher temperature water is needed for domestic hot water. This unit furnishes low temperature water from a lower and outer jacket, domestic hot water from a hotter upper section supplied with a long, instantaneous coil. The boiler is available in two sizes, 81,000 and 110,000 Btu per hour for heating; both sizes furnish 3 gal. per minute of domestic service water.

Space Saving Equipment

At the current high cost per cubic foot of house, the necessity for saving space is acute; one way of meeting this situation, at least to a small extent, is to build the oil or gas boiler or furnace in a more vertical form so that less floor space is used than in conventional designs. One of these vertical models is an oil-fired warm air furnace with a stainless steel combustion chamber and a device that starts the burner fan briefly before the oil is ignited and allows the fan to continue for a short period after the burner is shut off, a method reported to reduce fuel consumption appreciably.

The vertical heaters are also made for gas. One of these has a 3-stage burner and 2-stage blower. All parts are accessible and removable from the front, a desirable feature if the unit is to be located in a closet.

A recently introduced, compact, cast iron boiler designed for oil burning has vertical water tubes, built-in removable hot water coil, and is available in four sizes, steam or hot water.

Special Types

One newly-introduced oil-fired warm air furnace, intended specifically for small homes, has the flue connection at the top, allowing the breeching to run straight to the chimney in any direction. An air-oil impact method of oil "atomization" is used. The filter frame can be placed on either side or back of the fan.

Another oil-burning warm air furnace has an unusual feature in that burner operation is continuous so that heat is always ready on demand from the thermostat. The operation at non-demand periods is, of course, at a low output, just how low depending on the weather since the output is adjustable. Some models of this unit have an economizer flue to pre-heat air to the burner.

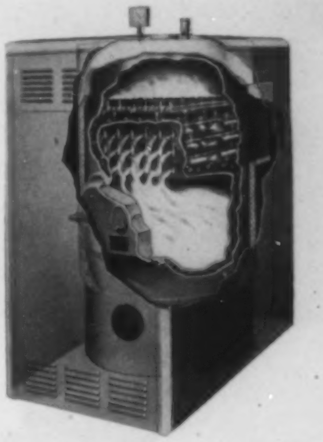
There is also an oil-fired warm air furnace which consumes only ¾ gal. of oil per hour at its 75,000 Btu per hour register rating. This unit has a preheater for the return air, the heat being obtained from the gases of combustion just before they leave the furnace.

A steel boiler for conversion oil burner application is so designed that all of its inside heating area is exposed to flame, making for a compact unit.

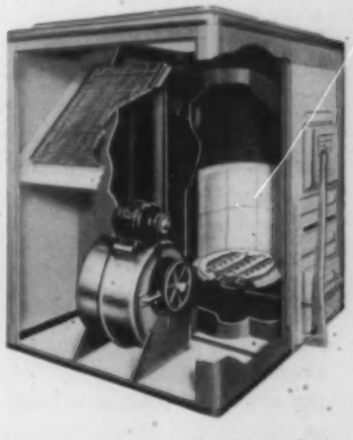
A vented gas heater for special application is intended for installation between the walls to heat two adjacent rooms, and a wall opening 28 by 51 in. is required (other models fit into a 14 by 50½ in. opening). The bottom of the panel is off the floor and the air inlet is located in a hidden duct beneath the raised panels. Top louvers give a downward and outward direction to the warm air.

Coal-Fired Equipment

Boilers of the Anthratube type are being made by several manufacturers. The Anthratube principle, developed by Anthracite Institute, involves the burn-



Fitzgibbons Boiler Co., Inc.

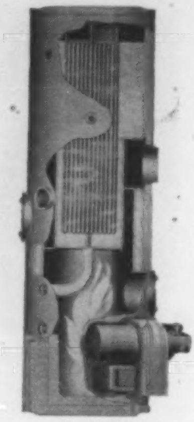


Stokol Stoker Co., Inc.

With the fuel situation still somewhat uncertain, boilers and furnaces are being designed so that they can be converted quickly from one fuel to another. The boiler at the top operates on either oil, gas, or stoker or hand-fired coal. The furnace below it is adaptable to the same fuels with a conversion kit

U. S. Rubber Co.

Electric radiant heating panels, as made by one manufacturer, look like and are installed like fiber board. They contain a conductive rubber and are nailed along a non-conducting margin to ceiling joists



York-Shipley, Inc.

The boiler above furnishes low temperature hot water for radiant heating, has a large tankless heater for instantaneous domestic hot water and incorporates an air expansion tank inside the boiler

ing of that fuel in a tubular firebox of small cross-sectional area. A small quantity of pea size anthracite is fed steadily as required but burned at a rapid rate of combustion with a high rate of heat transfer. Ash is automatically ejected into an enclosed container.

An efficient method of burning soft coal in space heaters has been developed by collaborative effort of Battelle Institute and Bituminous Coal Research, Inc. Combustion air is brought in at one point only — above the grates. Part of the air moves down through the unburned coal to meet a second part of the air which has traversed the live coals, and these two parts meet a third part moving in directly. This device is designed to burn coal for 16 hours on high firing with one loading and 72 hours on low fire.

Bituminous Coal Research has also developed a smokeless, magazine-type, warm air furnace which, over a 12-hour firing cycle, shows an efficiency of over 60 per cent at an 80,000 Btu per hour output. The magazine holds a 12 hour supply of coal (coking or free burning) which feeds automatically; ashes are removed by a shaking grate, slate or clinkers by a dumping grate section.

That many, perhaps most, of the disadvantages of coal can be overcome has been demonstrated by a Canadian firm which is furnishing an unusually comprehensive service. The firm makes, sells, and installs stokers, builds special coal bins and ashpits, sells and delivers the coal on a degree-day basis (as oil has been delivered for years), and finally removes the ashes by a vacuum pump which the firm itself developed. Such a service would seem to have great possibilities in the United States.

Although not central heating equipment, a draft control device for fireplaces is of interest. The louvers are of heavy glass, and can be adjusted at top or bottom to check or increase the draft to the fireplace. The louvers are operated by turning knurled knobs geared to the glass strips. A bronze mesh screen is placed back of the louvers.

Chimneys

Chimneys have long been, almost literally, a headache to architects and heating engineers alike. They account for a large share of the heating troubles encountered: where the masonry contractor is incompetent they can be a fire hazard; the designer frequently has trouble reconciling a chimney of sufficient height with the low horizontal lines of the modern house. Although research won't solve all these problems, it has, it is hoped, at least provided the answers to some of the questions regarding draft. This is due to investigational work done recently at Battelle Institute and the National Bureau of Standards.

A prefabricated light weight flue now being made is supported entirely from the ceiling and roof and requires no brick work. The lining is of porcelain enamel with asbestos insulation between this and an outer metal casing.

Electric Heating

Electric heating may not be practicable for a whole house in most regions because of cost, but even in those places it may be advantageously used for special purposes such as providing auxiliary heat for bathrooms.

HEAT DISTRIBUTION

Convectors have come a long way in the twenty odd years since they first appeared. While there have been no startling developments in recent years, there has been a slow but steady improvement in design. One new model has a curved outlet air grille within the enclosure and a manually-adjusted temperature control damper; when closed, the damper conceals the outlet grille. Convectors designed specifically for one-pipe steam systems are particularly useful in modernizing such systems.

Radiant Baseboards

Baseboard radiators and baseboard convectors have been given an all-inclusive name — radiant baseboards. The details of design among various types vary widely. The important point is that they are giving "very satisfactory results" according to researchers at the University of Illinois.

Tests on radiant baseboard conducted at that institution during 1948 were reported by Weigel and Harris of the University staff before the American Society of Heating and Ventilating Engineers a few months ago. They concluded that:

1. The radiant baseboard is particularly adapted to maintaining comfortable floor slab temperature in a basementless structure because long, low units of this type cover a large percentage of outside exposure.
2. Average air temperatures, as measured 3 in. above the floor, were approximately 70 F to 71 F for all indoor-outdoor temperature differences encountered when the temperature at the 30-in. level was 72 F.
3. Temperature differences between the occupancy zone, as measured 3 in. and 30 in. above the floor, were only a degree and a half to two degrees.
4. The hot water heating system using the radiant baseboard responded quickly to sudden changes in load, thus maintaining a constant room air temperature even while the outdoor temperature was changing rapidly.

In prior tests with a one-pipe hot water system and radiant baseboards, faint dirt patterns were detected in the kitchen but not in other rooms, and draperies hanging over the baseboards were not in need of cleaning at the end of the season. Experience indicated that there was little likelihood of streaking provided that the water temperature was kept below 200 F.

Warm Air Heating

A warm air system for use with oil or gas and intended to reduce installation costs sharply was introduced only a few months ago. It has two features: (1) ducts of aluminum are pre-cut to standard lengths, formed into 4-in.

round ducts, but shipped open so that the package is compact — the sheets are reformed into ducts simply by closing the seam; (2), the air is introduced into the room through a register which mixes the hot (150 F to 175 F) air with room air; the air is emitted in a fan-shaped pattern along the wall, thus forming an invisible warm curtain. The air is so deflected that furniture can be placed within a foot of the register.

Hot Water Heating

An interesting development in hot water heating is a device for eliminating the accumulation of air in hot water radiators. It consists of two parts: one part fits into the boiler so as to take off supply water from below the top where air collects; air flows up from top of boiler into a pipe leading to the other part, a tank fitting, which provides entrance for the air into the compression tank, where it is trapped.

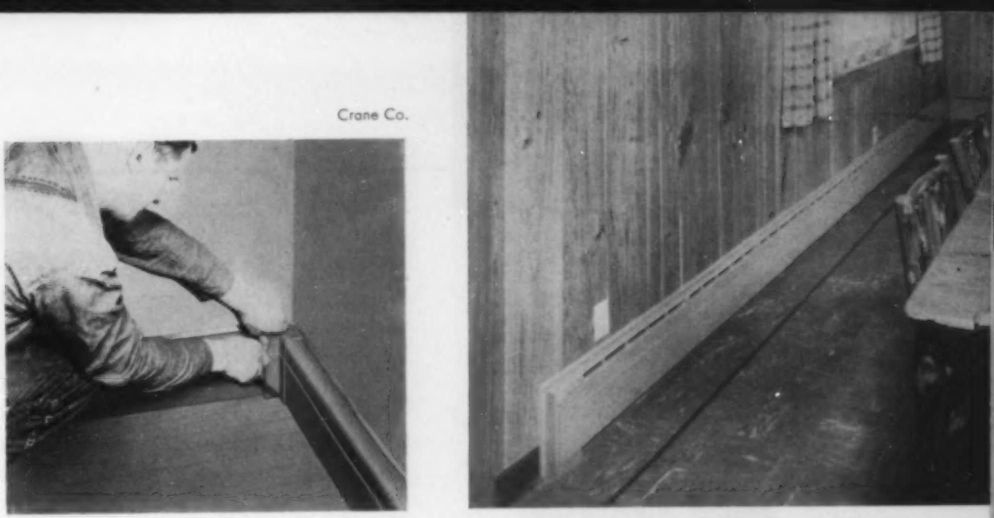
A new control for hot water heating systems consists of a control unit and control valve, the latter being a three way mixing valve. The valve is located near the boiler in the supply main and connected to the return. One thermostatic bulb is located in the supply main just beyond the valve, another outdoors, both connected to the control unit. If the outdoor bulb calls for more heat, the mixing valve admits more hot water from the boiler to the system; if the bulb in the main is satisfied, the valve admits more (cool) return water and less hot water to the main.

Radiant Heating

There has been a great deal of work done on radiant heating in the past few years — and more is planned. The American Society of Heating and Ventilating Engineers, for example, has a comprehensive program of research on this subject, some of which is started, some only projected.

All the answers are by no means known as yet, but the art is in such shape that there is little reason to go wrong on design if the designer is conservative. It is true, however, that most of the attention so far has been to design, and not to the many practical matters of concern to the architect, heating contractor, plastering contractor or masonry contractor. For this reason a large copper company has erected a building in Rome, N. Y., equipped with a number of types of copper panels in which a lengthy and complex series of tests have been under way for a year. The first results are just being reported — one being that no more than 40 Btu per hour can be expected per square foot of floor panel.

Crane Co.



Recent tests on radiant baseboards—the new name for baseboard convectors and radiators—showed, according to researchers, that they maintain a comfortable floor temperature, provide even room temperature, respond quickly to heating load changes

Much, perhaps most, of the past work on radiant heating has been with coils embedded in floor or ceiling, or to a lesser extent, to warm air circulated above a ceiling (floor panel heating with warm air circulating through hollow tiles is now being applied in certain localities). Far less attention has been paid, at least in this country, to use of heated pipes in dead air spaces below floors or above ceilings.

A development of the past six months has been a line of prefabricated finned coils designed for suspension between the ceiling joists or between the studs of walls. These coils are of two parallel runs of ⅝ in. copper tube with aluminum fins, and are available in 10-ft. lengths to fit 12, 16 or 24-in. joists or stud spacings.

Development of these coils as a manufactured item is significant because, generally speaking, many heating contractors are set up to erect and install and not to fabricate if it can be avoided, especially in house work. One reason for this is that estimating costs is accurate in that part of the estimate dealing with purchased items but less so where labor and field work are involved.

Consideration has been given to, and at least a few trial installations made, of "open" panel heating systems where warm air is circulated over the ceiling, which becomes a radiant panel, and is then introduced into the room. The closed system provides heating only, whereas the open system allows control of room humidity, air cleaning, and air circulation.

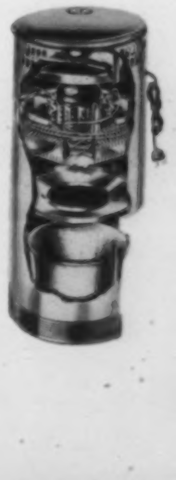
Experiments in Cleveland using three different systems — a warm air ceiling panel, a conventional forced air system, and an open panel system in the same room, were recently conducted. No complete report was ever made, but after the trial the owner concluded that he preferred the open system.

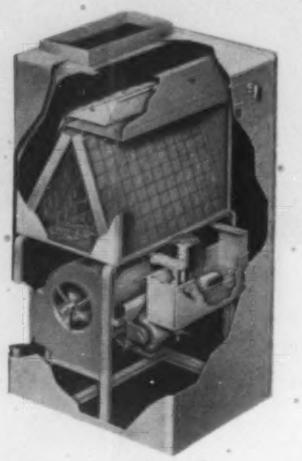
Electric radiant heating using buried cable was described two years ago. Since then two different approaches to electric heating have been made. The first consists of a special fabric impregnated with rubber and carbon to produce a conductive rubber. It is made in panels 4 by 4 ft., 3 by 4 ft., or in special sizes, with output of 58 or 75 Btu per sq. ft. per hr. The panels are nailed (along a 2-in. non-conducting margin) to the ceiling joists, and the panels are electrically connected through an outlet box on the back of each panel.

The second method involves panels of tempered glass with fused aluminum elements imbedded and with an aluminum reflector in back. A standard panel is 16 by 24 in.

Two types of dehumidifiers, mechanical and chemical, are now available for keeping basements dry; this one is of the first type which cools the air below dew point

Frigidaire Div., General Motors Corp.





National Air Conditioning, Inc.

Quite a bit of publicity has been given to air sterilization lately. Here is a warm air heater which uses a chemical, in liquid form, to reduce bacterial count of air

Pipe

Steel pipe has been particularly vulnerable to competition from copper tube because of a number of factors, including the nuisance and cost of threading, weight, friction at joint, and failure at thread. For this reason, among others, the development of a line of malleable threadless pipe fittings is believed to be of considerable importance. The joint is soldered with a silver alloy. Since standard pipe has to have its present thickness to allow for the weakening by threading, this joint will make possible a lighter weight steel pipe which, however, is not yet available. Even so, the simplification of field work, elimination of the thread, and other advantages, are notable.

Snow Melting

Since heat is required for the operation of snow melting for walks and driveways, this subject is mentioned here. Circulation of hot water, with antifreeze liquid added, through embedded pipes for melting snow is making great headway, and the heavy snow in the east during the winter of 1947–48 considerably stimulated interest. It is desirable to start the snow-melting system as soon as snow begins to fall, and this can be done automatically by a photoelectric cell control. In a Boston suburb, a quarter mile of road is equipped for snow melting because of a 20-degree hill which formerly was impassable for periods during the winter. An oil-fired plant about the size of that for a 12-room house was installed at a cost of $3500, and with oil cost (winter of 1947–48) of $200 for the winter.

AIR CONDITIONING

Cooling

In the southwest where the dry bulb-wet bulb temperature differences are always relatively high, evaporative cooling is commonplace. Homemade devices are, however, gradually giving way to packaged units. Unfortunately such an inexpensive approach to the problem is not possible in most of the United States.

Central mechanical systems for houses are still comparatively few, but the use of unit room conditioners is growing. These include refrigerating condensing unit, fan and filter. The gas-fired year round air conditioner is a most satisfactory system where it can be used; unfortunately, the restrictions on adding new gas installations have hampered its application in many regions where it might find its richest market. Gas restrictions, however, are gradually lifting and the gas utilities are most concerned in promoting such devices (due to the good annual load factor). Thus future for this equipment appears bright.

Heat Pump

Further headway has been made with the heat pump for year round use. Considerable time and money have been spent in exploring the possibilities of use of the ground as a heat source, but it now appears that the advantages of a packaged unit which can use air as the heat source outweigh those of a system employing the ground as a heat source. The ideal load for a heat pump would be one where the winter and summer loads are equal, but since this is not attainable in the north, the question arises as to just where the dividing line falls geographically, and above which the heat pump is not suitable.

One authority defines the real market for the heat pump as the more southerly portion of the United States. Others are convinced that it is even farther north than the Mason-Dixon line. To settle this, one electric system is installing heat pumps in five houses between Tennessee and southwest Michigan and including these locations. Numerous other trial installations are being planned on a national basis by a large electrical manufacturer.

It does seem to be generally agreed that heat pumps are possible only for the higher cost homes, but just how high is also a controversial matter. With use of heavy insulation, electric heating and cooling by means of the heat pump may be expected to move more and more into the picture. It should be added that the gas-driven heat pumps are also feasible.

Air Cleaning

Air cleaning in houses is usually with throwaway filters and to a lesser extent with permanent cleanable filters which are part of a warm air system.

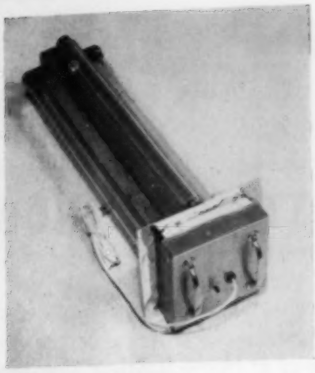
For especially dirty cities, such as those in the soft coal regions, very good results are being obtained with electrostatic cleaners which operate as part of the warm air or air conditioning system. The high first cost can be absorbed more easily in these localities where the cleaning of draperies, curtains, and other furnishings is quite frequent and consequently expensive.

One method of destroying bacteria in warm air ducts is the germicidal lamp, available in compact and easily installed

Holly Mfg. Co.

Modine Mfg. Co.

These photos exhibit some of the trends in convector units. On the left is a self-contained gas heater which fits in an ordinary stud wall. The other works on hot water and steam systems and has a manual temperature control damper



Coleman-Pettersen Corp.

Another air sterilization method is that of installing compact, ultra-violet lamp units in the ducts of a warm air heating system

units. It is reported that a 4- or 5-room house needs only two 15 watt units. The lamps have a life of 4000 hours. In recent years a liquid, triethylene glycol, has been used for the purpose of reducing bacterial count in the air. A unit in this category consists of a blower for use in conjunction with a warm air heater, in which the air is cleaned by passing through a filter which in turn is saturated and flushed continuously by liquid triethylene glycol circulated by a small sump pump. This liquid, for which bactericidal qualities are claimed, is also picked up in the form of vapor in small amounts and is circulated through the room.

Dr. L. P. Herrington of the John B. Pierce Laboratory of Hygiene, has mentioned an interesting possibility — that present day research has neglected the thermal treatment of air for bacterial content. He cites the old-fashioned hot air furnace with air temperatures of 400 or 500 F which was extremely efficient with respect to air disinfection. Another future possibility in air cleaning is by application of ultrasonics (high frequency sound above the range of the human ear) for coagulation and precipitation of fine gas- or liquid-borne particles.

Dehumidification

It is unfortunate, when every cubic foot of a building is needed, that many basements have a damp atmosphere. This finally has received some skilled attention and two types of dehumidifiers are now available for this specialized application.

One is a mechanical refrigeration unit which removes the moisture by chilling the air below the dewpoint. The other is of the chemical type using silica gel and is under automatic control of a humidistat.

VENTILATION

Kitchen ventilation has developed to the point where more attention is paid to removing heat, moisture and cooking odors at the point of origin rather than allowing them to permeate the whole room.

An overhead type, built-in ventilator has three sections — ceiling grille and fan, ceiling housing, and outside grille. The ductwork is concealed, and the ceiling housing has a shutter that opens when the fan is turned on and closes when the fan stops.

Attic fans are undergoing refinements and are now available in models for solving special problems. In this line is a fan especially intended for basement application in houses where attic space is not available. The unit has a ½ hp motor and acoustically-treated fan blades. Fans are also made for attics where space is limited as in ranch type or low-pitched roof houses.

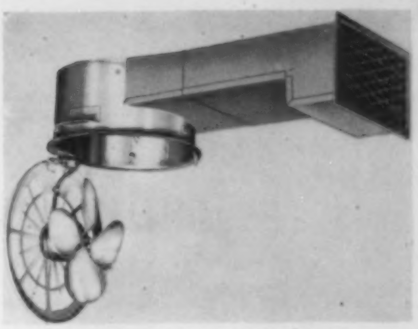
WATER HEATING

Three developments in domestic water heating are outstanding. One is a method of combating tank corrosion, the second is the table-top or desk type water heater, and the third is the use of the heat pump for year-round water heating.

The corrosion resistant tank has a magnesium alloy rod which extends into the water from the top of the tank so that any electrolytic action affects the rod instead of the tank. The table-top electric water heater provides a desk or working surface and fits in nicely in built-in kitchens. Similar units are available for gas.

Experimental work has been going on for some time, and a few months ago the first progress report was released, on use of a refrigeration unit acting as a heat pump for year-round water heating. Since about two thirds of the heat comes from the air and one third is paid for as electrical energy, this device will place electric water heating on a competitive basis with gas. An advantage is that cooling is a by-product, so that a living room could be cooled or a basement dehumidified at no extra cost.

The Emerson Electric Mfg. Co.



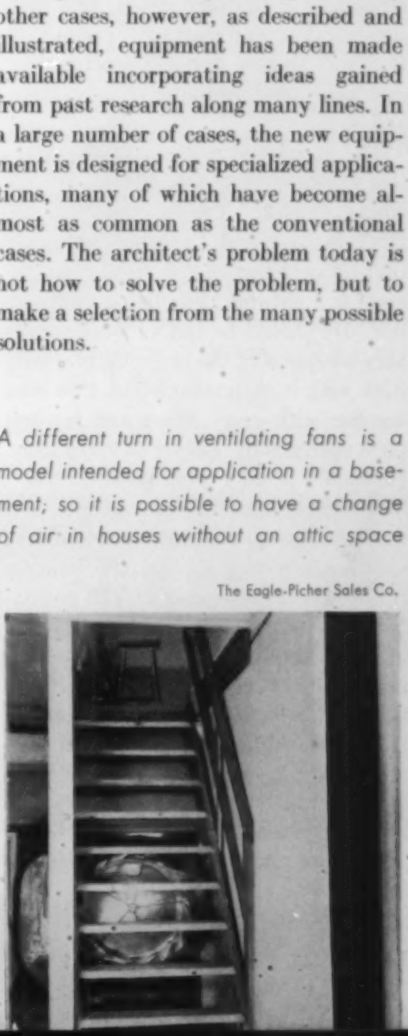
With more emphasis placed on the removal of moisture, odors and heat from kitchens, this fan fits quite well into the picture. A shutter in the ceiling housing opens or closes when the fan is on or off

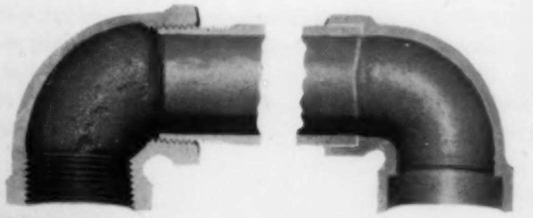
CONCLUSION

Developments in heating, ventilating and air conditioning of houses during the past two years have been reviewed. Some important developments are in the experimental stage; in a great many other cases, however, as described and illustrated, equipment has been made available incorporating ideas gained from past research along many lines. In a large number of cases, the new equipment is designed for specialized applications, many of which have become almost as common as the conventional cases. The architect's problem today is not how to solve the problem, but to make a selection from the many possible solutions.

A different turn in ventilating fans is a model intended for application in a basement; so it is possible to have a change of air in houses without an attic space

The Eagle-Picher Sales Co.





Threadless pipe fittings, soldered with a silver alloy, simplify joining of pipe, allow use of a lighter-weight pipe and lower friction loss

Stanley G. Flagg & Co., Inc.

HOME BUILDERS DEBATE COST-CUTTING METHODS

Report on Cost-Cutting Clinics at Home Builders' Convention

COLUMNISTS and politicians who berate the building industry for its backwardness might change their tune if they could have witnessed the eager interest in cost-cutting clinics at the recent convention of the National Association of Home Builders. Hundreds of professional builders crowded the meeting rooms, many standing through the sessions, jammed in almost like subway riders at Times Square Station.

The program was hurried always, as the builders pounded questions at panel "experts" and at each other, in the effort to pin down exactly the relative economies of modular design, slab floor construction, pre-cutting, prefabrication, roof trusses, dry-wall construction, cost analysis, scheduling of operations, and so on.

The architect's role in all these matters was frequently brought up. For example, Clarke Daniel, Washington, D. C., builder, said, "It is our experience that an architect of the right temperament is a natural for building construction. He should be put to work at the very inception of the project and should stick with it until completion. One man familiar with every phase and in complete charge is the answer to lower costs. He should be on a profit-sharing basis."

It was emphatically brought out that the house plan is all important in the search for economy. And the builders present, being salesmen as well as contractors, were fully conscious of the need for good space planning. For the house cannot be made small without being well planned. Another way to put it is that, with sales as the goal in a period of increasing competition, the advantage will be with the builder whose architect can use space the best.

Advance planning of a high order was continually stressed—"You make your money before you start building, in selection of site, in studying contours lot by lot, in the design of the houses, in the scheduling of operations. You make money in the paper stage; when you get into actual materials you start losing it."

Site Planning

Site planning was stressed here as an economy measure, not so much as it commonly is in amenity terms. As Daniel said: "Economy in housing starts at the very beginning. Careful selection of the land is absolutely essential. The contours and the physical qualities of the land cannot be too carefully checked. In many instances test boring is essential. You must know your battlefield. Don't ever think that cheap land is essential for low-cost housing. Good land is; modest development requirements also."

Roads following contours will lead to excessive grading on individual lots; so will roads perpendicular to contours. Roads angling the contours will usually minimize bulldozing costs. Then each lot should be given individual study, to place the house for minimal grading.

Modular Design

Modular design is good, but must go much farther, said W. H. Scheick, Small Homes Council, University of Illinois. "We are sure that modular coordination offers great possibilities for economy in house construction. The industry engineered house is a good beginning, but not more than a beginning toward the effective use of modular coordination.

"In the research project at Illinois (ARCHITECTURAL RECORD, May, 1948), the savings in materials were not carefully measured. They were not great savings, but they were important because they were savings opposed to waste. Trusses saved lumber; joists and studs worked to even lengths; dry-wall sheets were seldom cut. These materials savings eliminated the useless waste cuttings and trimmings that clutter the non-modular job.

"Our chief interest centered on man-hour savings, which totaled more than 20 per cent, realized on this house as a result of the employment of engineered methods possible with a modular plan.

"We want everyone to remember that the man-hour savings were effected by a small-scale builder who had not used engineered methods before. No doubt large scale builders, already thoroughly familiar with these methods, could beat the best times established at Urbana. But we think there are thousands of small builders who must learn what our builder did.

"The 'big time' competition in house building today is between large-scale factory production and large-scale site production. The big operators have pioneered the principles of planning and construction employed on the industry engineered house project. They know the value of engineered plans and they are coming naturally to modular design.

"But we think there is still much building to be done by small-scale builders. These men cannot afford to have their houses planned and engineered for their own operations. They need not one industry engineered modular plan, but many to choose from.

"For this reason, the Small Homes Council is carrying vigorously on with architectural research to develop the advantages of modular design. Modular designs are adaptable to any method of

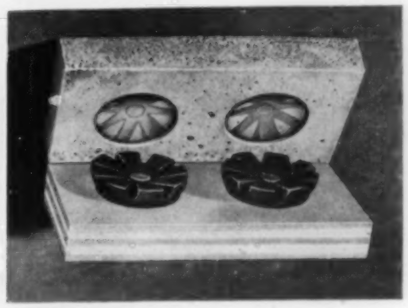
(*Continued on page 190*)

NICHE-FORMING KEYS

A Buffalo architect's invention for achieving a "lathless" mechanical bond between concrete and plaster is a rubber key form called a *Kif*. The forms are now available for lease to contractors.

The product is intended not only to form a keyed plastering surface, but to provide anchors for suspending overhead sprinkler, water and heater pipes and ducts and for the anchoring of masonry veneers.

Nailed about 6 in. apart to the wooden forms which support the concrete when it is being poured, the rubber Kifs leave undercut, cone-shaped cavities when they are pulled out of the hardened concrete by the removal of the forms.



Removable, rubber forms make keys in concrete so as to anchor the plaster finish

The manufacturer reports savings in cost, compared with the metal lath, bush hammering, or chemical adhesive methods; in building height for each story (approximately 4 in.); in plaster; and in capital investment (since Kifs are only leased on a rental basis). Buffalo Products Inc., 315 Babcock St., Buffalo, N. Y.

INDOOR HOME INCINERATOR

An *Indoor Home Incinerator* (Model No. 2) in an improved model has been designed to solve the problem of rubbish disposal in homes where automatic heating equipment precludes burning it in the furnace.

The incinerator is a double-walled, cylindrical metal unit fitted with a welded steel rod inner grating, cast iron swinging top and ash clean-out door. Draft is induced through the top by means of a grate-baffle, and the resulting down-draft is said to dry the contents and aid in combustion.

All combustible refuse — including both dry and wet garbage — is dropped into the unit and collected until the incinerator is filled to its 2-bu. capacity, when the refuse is ignited from the top.

The model is 23 in. in diameter and 32 in. in height and taps to any furnace flue 6 in. or larger. Majestic Co., Huntington, Ind.

BOWSTRING ROOF TRUSSES

Custom-built *American* wood bowstring trusses are designed to cut building time and construction costs by eliminating posts, beams, and center bearing walls; keeping expensive brick work to a minimum; and cutting roof costs because of their low center height (only one-eighth of a span).

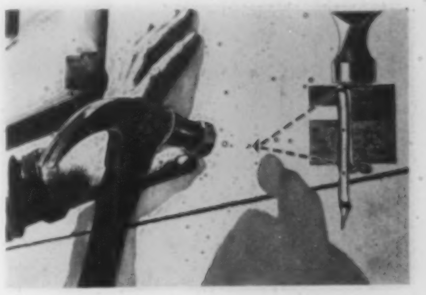
A parabola which is reported unsurpassed for strength by other shapes forms the top chord and permits spans up to 150 ft. Crescents and belgians, glued beams, arches and trusses also are available. American Roof Truss Co., 6844 Stony Island Ave., Chicago 49, Ill.

LAMINATED WOOD FURNITURE

Bentply furniture for commercial and institutional use strives to combine the functionalism of contemporary design with an air of warmth and comfort.

Included in the line are wood chairs and tables and upholstered pieces. The wooden parts are made of laminated wood which is electronically bonded and molded to shape on specially built presses.

The furniture is available in veneers of maple finished in natural maple or walnut or of mahogany with bleached mahogany or cordovan mahogany finishes. Covers are offered in fabrics, plastics or imitation leathers and with spring or rubber seats. Thonet Brothers Inc., 1 Park Ave., New York 16, N. Y.



Last blow of hammer causes clinching nail to lock the shingles with the sheathing

STAINLESS STEEL FACE NAIL

Addition to the *ES-Nail* line of a self-clinching stainless steel face nail which locks shingles directly to gypsum and insulation sheathing has been announced.

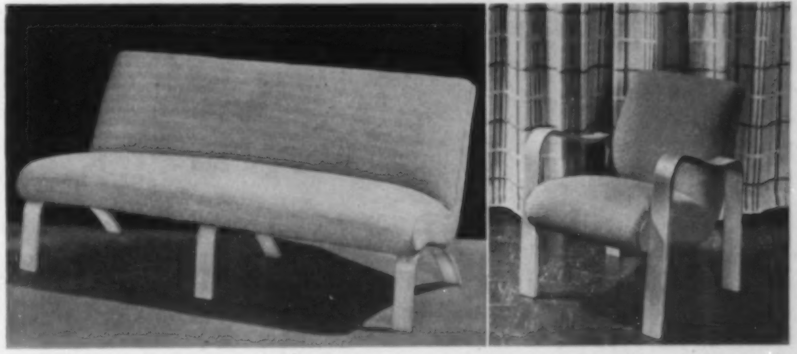
ES-Nails are driven with a carpenter's hammer like any nail. The fastener is made from a strip of sheet metal, which is channeled at both ends and bent around a triangular arbor to form the head. The outer or driving leg sheaths and protects the inner leg, which operates the locking mechanism.

A small V-shaped tab on the inner leg is forced into a slot in the driving leg during manufacture, providing the necessary hinge for the clinching foot. The last blow of the hammer collapses the triangular head against the face of the shingle, which by a simple lever action causes the locking foot to be drawn up behind the sheathing material.

Lower unit cost, faster application and less waste are among the economies claimed for the use of ES-Nails.

The nail is available in two sizes, both for use with asbestos shingles: the 1⅜ in. length on ½-in. non-wood sheathing, and the 1¾ in. length on 25/32-in. insulation sheathing. Elastic Stop Nut Corp. of America, 2330 Vauxhall Rd., Union, N. J.

Wooden parts of furniture shown are laminated and come in maple, walnut or mahogany finishes. They are available as single chairs or settees in many coverings



(*Continued on page 178*)

MANUFACTURERS' LITERATURE

Lighting

The Troffer That Adjusts After Installation. Shows in detail many features of *Smithcraft* shallow and deep troffers. Explains function of the Aligner Hanger which is designed to permit leveling and adjusting of the troffer after the installation is completed. Methods of installing the troffers in various ceiling constructions are shown. 16 pp., illus. Smithcraft Lighting Division, Chelsea 50, Mass.

Holophane Calculux. An illumination indicator designed to give the footcandle levels required for high visual performance for critical seeing tasks. The indicator is claimed to: (1) show levels for productive work, (2) show levels for sedentary work, (3) show beneficial changes in existing working conditions and (4) permit planning of future work. Holophane Co., Inc., Dept. of Applied Research, 342 Madison Ave., New York 17, N. Y.

Industrial Paints

Enamel-On Industrial Finishes. Color card of protective coatings for use on wood or metal. Designed for quick air drying, the finishes can be supplied also as mar-proof baking finishes. Specifications are included. 4 pp. Brooklyn Varnish Mfg. Co., 50 Jay St., Brooklyn 1, N. Y.

Concrete Admixture

Portite. Discusses 14 advantages of a liquid admixture said to act as: (1) a controllable air entraining agent, (2) a wetting or dispersing agent, and (3) a promoter of cement hydration. Laboratory and field findings are also discussed. 4 pp., illus. Hopper Products, Inc., 12 E. 41st St., New York 17, N. Y.

Roofing

Rock Cork Felt Sided Roof Insulation. Advantages of rock cork roof are discussed and photographs illustrate how it is applied. Conductivity values are given. 4 pp., illus. Johns-Manville, 22 E. 40th St., New York 16, N. Y.*

Insulated Piping

(1) Engineering Data for Underground Steam Distribution; (2) Typical Engineering Drawings. The first booklet deals with such subjects as the layout of a steam distribution system, methods of estimating steam loads, steam flow charts and tables and properties of saturated steam. In the second booklet actual drawings are given for a wide variety of insulated piping installations, including commercial, institutional, and public buildings. 34 and 40 pp., illus. The Ricwil Co., Dept. A23, Union Commerce Bldg., Cleveland, Ohio.*

Plastic Signs

Plexiglas for Signs. Pictures 20 new Plexiglas signs ranging from large outdoor displays to small point-of-sale panels. It describes their design, gives dimensions and explains methods of illumination and fabrication. 16 pp., illus. Plastics Dept., Rohm & Haas Co., Philadelphia.*

Garage Doors

Strand All Steel Galvannealed Garage Doors for Single and Double Garages. Types of doors pictured and described in this folder include a canopy door for 8 by 7 ft. garage opening, receding or track type door for an 8 by 7 ft. opening, and a track-type door for 16 by 7 ft. double-garage opening. Also included are diagrams and instructions on building garage door openings. 12 pp., illus. Strand Garage Door Div., Detroit Steel Products Co., 3113 Griffin St., Detroit 11, Mich.*

Marble

Stores Modernize with Marble. Shows use of marble in modern store exteriors and interiors. The manifold uses and advantages of marble are discussed. Detail drawings illustrate the support, anchorage and protection for exterior marble veneer. Construction details are also given for several actual buildings. Names and addresses of Marble Institute of America members are included. 12 pp., illus. Marble Institute of America, Inc., 108 Forster Ave., Mount Vernon, N. Y.*

Prefabricated Houses

Better Homes by Better Methods. Booklet explains the construction, erection, financing and distribution of prefabricated homes. Photographs of typical houses manufactured by 34 different companies are shown. 16 pp., illus. Prefabricated Home Manufacturers' Institute, 908 20th St., N. W., Washington 6, D. C.

Structural Steel

Light Gage Steel Design Manual. This manual of basic sections and design data for light gage, cold formed steel structural members is intended to supplement the official design specification published by the American Iron and Steel Institute in 1946, and to facilitate application of the specification to ordinary design problems. Design charts and structural properties for these light gage steel members are included. Examples of practical design problems illustrate the use of tables and charts. 77 pp., illus. American Iron and Steel Institute, 350 5th Ave., New York 1, N. Y. *$1.00.*

New Products

New Products (1949 Edition). Compilation of information on more than a thousand new products and services. The products described are classified by industry and indexed by name and address of each producer. 80 pp. N. Y. Journal of Commerce, 63 Park Row, New York. *50 cents.*

Radiant Baseboards

U. S. — Comfort Ray Radiant Baseboard. Engineering data and detail drawings on a new line of radiant baseboards designed for use with forced water heating systems. Rated heat outputs for various baseboard lengths and water temperatures are listed. Diagrams show suggested installation methods. 6 pp., illus. United States Radiator Corp., 300 Buhl Bldg., Detroit 31, Mich.*

Fire Safety Standards

Building Code Standards for the Installation of Heat Producing Appliances, Heating, Ventilating, Air Conditioning, Blower and Exhaust Systems. Information on the above subject contained in the 1943 edition of the National Board of Fire Underwriters Recommended Building Code has been reviewed, brought up to date, and is now available in a separate publication for the first time. National Board of Fire Underwriters, 85 John St., New York 7, N. Y.

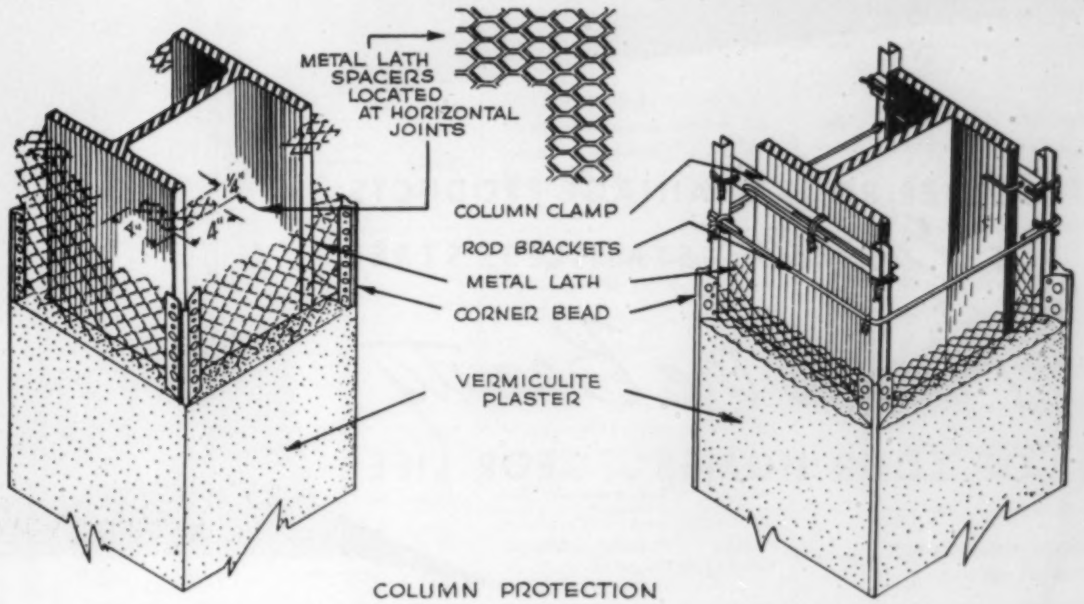
(*Continued on page 198*)

***Other product information in Sweet's File, 1949.**

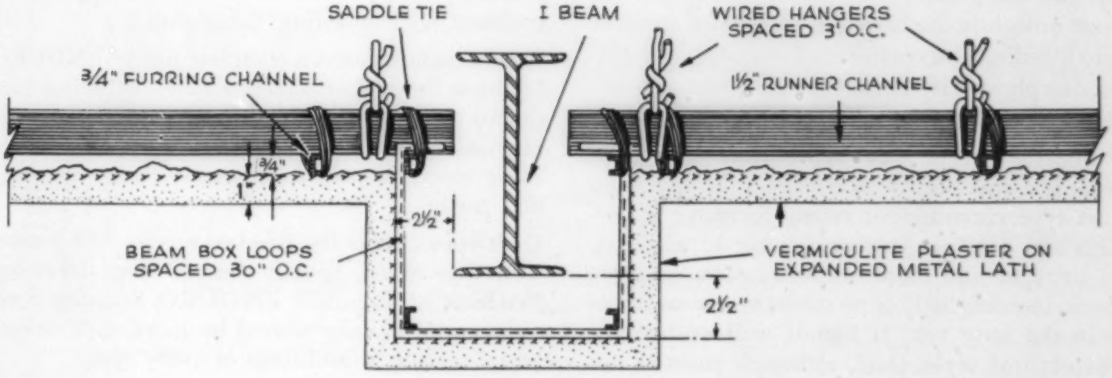
FIREPROOFING STRUCTURAL STEEL WITH VERMICULITE PLASTER

By Vermiculite Institute

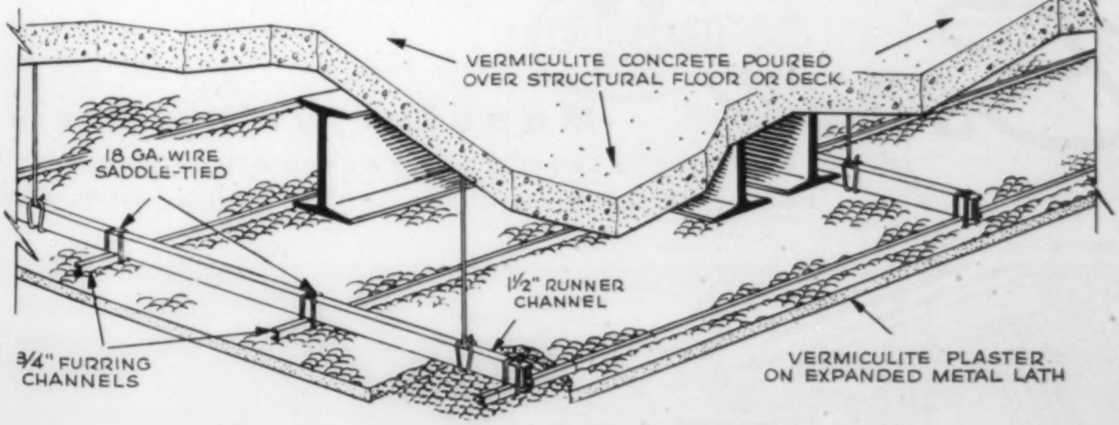
(Continued on page 153)


METAL LATH SPACERS LOCATED AT HORIZONTAL JOINTS
1/4"
4"
4"
COLUMN CLAMP
ROD BRACKETS
METAL LATH
CORNER BEAD
VERMICULITE PLASTER

COLUMN PROTECTION


SADDLE TIE
I BEAM
WIRED HANGERS SPACED 3' O.C.
3/4" FURRING CHANNEL
1½" RUNNER CHANNEL
3/4"
1"
2½"
BEAM BOX LOOPS SPACED 30" O.C.
VERMICULITE PLASTER ON EXPANDED METAL LATH
2½"

BEAM PROTECTION


VERMICULITE CONCRETE POURED OVER STRUCTURAL FLOOR OR DECK
18 GA. WIRE SADDLE-TIED
1½" RUNNER CHANNEL
3/4" FURRING CHANNELS
VERMICULITE PLASTER ON EXPANDED METAL LATH

SUSPENDED CEILING PROTECTION FOR STRUCTURAL STEEL

BERGER ROOF DRAINAGE PRODUCTS OF *Enduro* STAINLESS STEEL

Protect the Beauty

OF YOUR HOMES . . . FOR LIFE!

Now, you can protect your clients' homes *for life* against unsightly discoloration of painted surfaces due to bleeding and corrosion of roof drainage systems. Simply specify Berger Roof Drainage Products, made of Republic ENDURO* Stainless Steel.

A complete Berger ENDURO Roof Drainage System is a real beauty treatment. It is free from patina type corrosion; it resists corrosive atmospheres and does not rust or tarnish. In addition, it is stronger and more attractive than old-style systems, requires little or no maintenance and costs less in the long run. It blends well with every architectural style. And, although paint is not necessary as protection, it may be applied to conform with building decoration.

Berger manufactures a complete line of ENDURO Stainless Steel Drainage Products, including conductor pipe, eaves trough and gutters, plus all necessary fittings and hangers. Any competent sheet metal worker can install them—quickly and easily.

Give your clients the lifetime service and protection they want. Specify Berger Roof Drainage Products of Republic ENDURO Stainless Steel —the metal already proved by more than twenty years' service in buildings of every type.

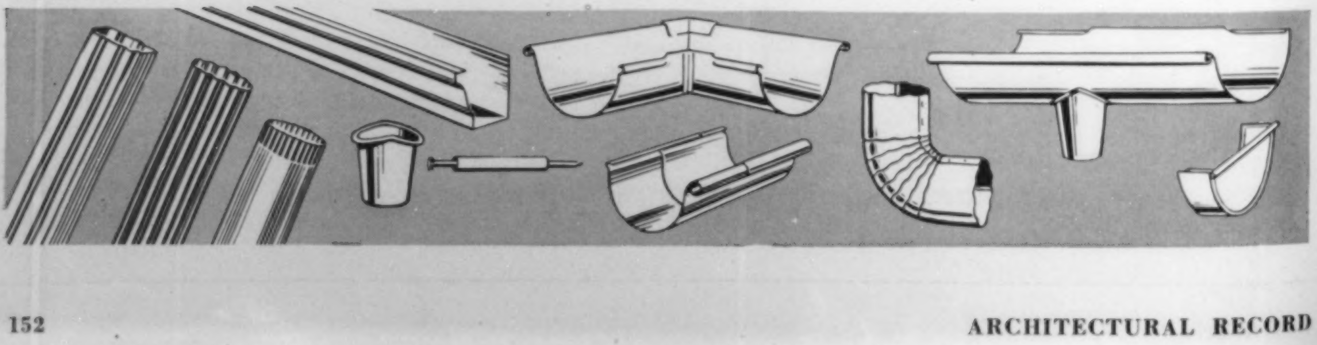
Berger REPUBLIC STEEL REG. U. S. PAT. OFF.

Manufacturing Division

REPUBLIC STEEL CORPORATION • CANTON 5, OHIO

Warehouses: BOSTON, PHILADELPHIA, ST. LOUIS • *Branch Offices:* DETROIT, INDIANAPOLIS

*Reg. U. S. Pat. Off.

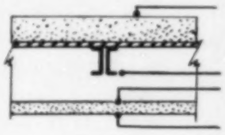
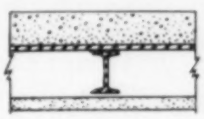
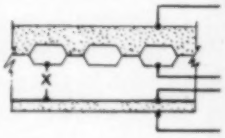
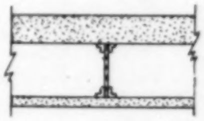
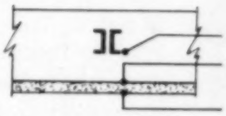
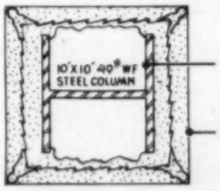
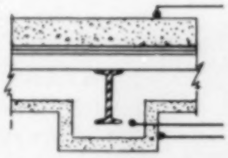


FIREPROOFING STRUCTURAL STEEL WITH VERMICULITE PLASTER

By Vermiculite Institute

(Continued from page 151)

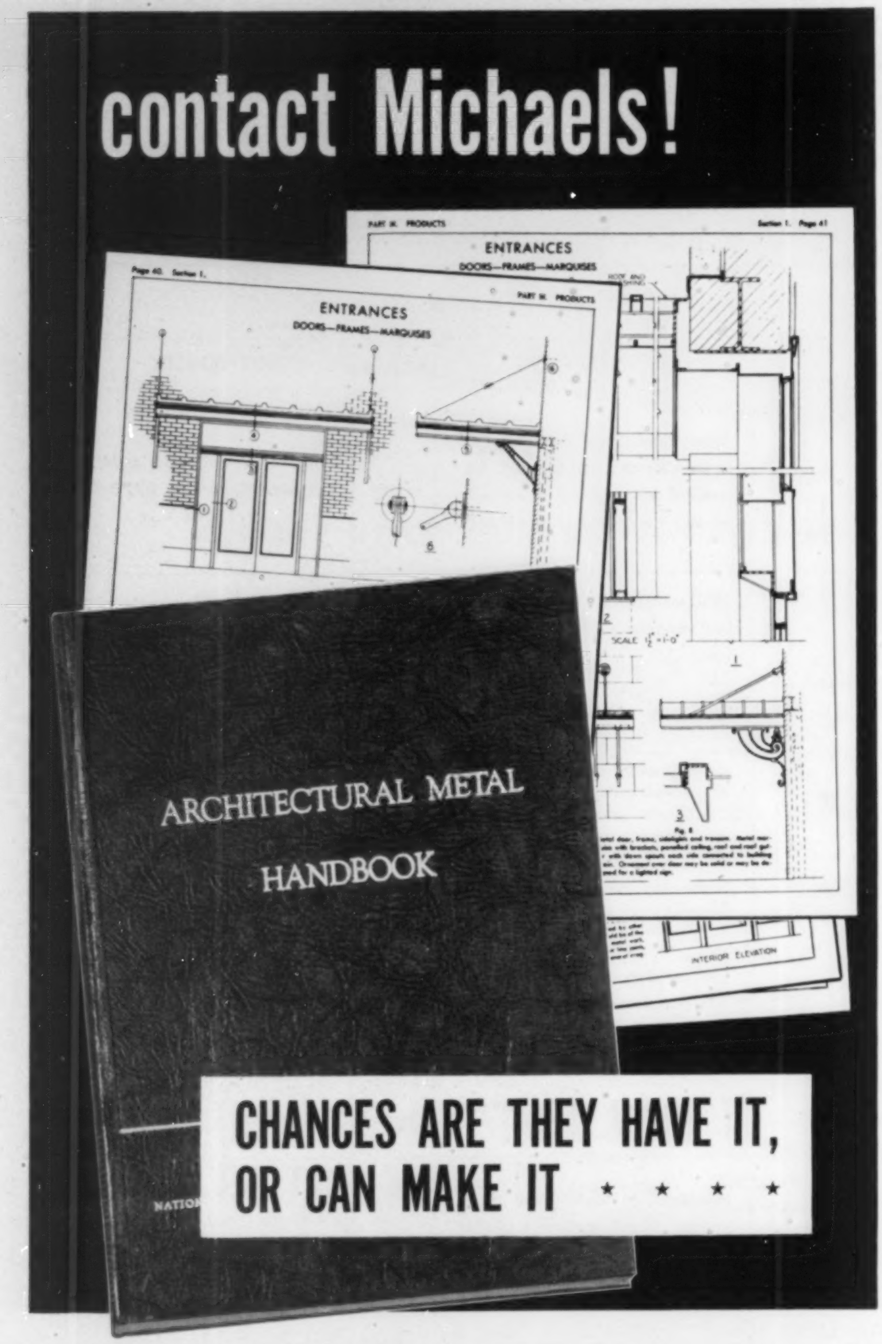
SUMMARY OF FIRE TESTS

		CONSTRUCTION	Aver. Temp. (F) at Rating Indicated	DESCRIPTION	RATING	AUTHORITY
FLOOR AND ROOF ASSEMBLIES	STEEL PLATE CONSTRUCTION		203 910 1142 2000	Steel Plate Floor Assembly, 2" vermiculite concrete topping. Suspended ceiling with 1" vermiculite plaster over face of metal lath.	4 hrs.	Underwriters' Laboratories, Inc. Retardant Report No. 2773—9/12/44 *
				2½" sand concrete topping. Ceiling vermiculite plaster on metal lath. 1"........................ ¾"........................	4 hrs. 3 hrs.	National Bureau of Standards BMS92, "Fire-Resistance Classifications of Building Constructions"—Table 44 †
	CELLULAR STEEL CONSTRUCTION		239 796 1009 2000	Minimum of 2" cinder concrete fill. Suspended ceiling of ⅞" vermiculite plaster over face of metal lath. Distance x = 2¼" or more.	4 hrs.	Underwriters' Laboratories, Inc. Ret. No. 2689—12/18/39 **
				Minimum of 2" sand concrete fill. Suspended ceiling of 1" vermiculite plaster on metal lath. Distance x = 2" or more.	4 hrs.	National Bureau of Standards BMS92—Table 45
	STEEL JOIST AND LIGHT STEEL CONSTRUCTION			2½" sand concrete fill. 1" vermiculite plaster on metal lath.	4 hrs.	National Bureau of Standards BMS92—Table 43
				2½" sand concrete fill. ¾" vermiculite plaster on metal lath.	3 hrs.	
				2" sand concrete fill. ¾" vermiculite plaster on metal lath.	2½ hrs.	
SUSPENDED CEILING PROTECTION FOR STRUCTURAL STEEL			910 1142 2000	Incombustible construction above ceiling. 1 inch vermiculite plaster over face of metal lath. At least 2½" air space between structural members and back of metal lath.	4 hrs.	Underwriters' Laboratories, Inc. Ret. No. 2773—1/20/47
COLUMNS			890 1920	Column protected with 1" vermiculite plaster over the face of metal lath. Lath spaced 1¼" from column flange. Space behind lath on flange faces filled with plaster as shown.	3 hrs.	Underwriters' Laboratories, Inc. Ret. No. 2851—1/7/47 *
BEAMS			203 975 2000	Steel "I" Beam supporting floor. 2" vermiculite concrete fill. Suspended protection of 1" vermiculite plaster over face of metal lath.	4 hrs.	Underwriters' Laboratories, Inc. Ret. No. 2773—9/12/44

* Obtainable from Vermiculite Institute, 208 S. La Salle St., Chicago 4, Ill.

† Obtainable from Superintendent of Documents, Government Printing Office, Washington, D. C., 25 cents.

** Obtainable from H. H. Robertson Co., Farmers Bank Bldg., Pittsburgh, Pa.


contact Michaels!
ENTRANCES
DOORS—FRAMES—MARQUISES
ARCHITECTURAL METAL HANDBOOK
CHANCES ARE THEY HAVE IT, OR CAN MAKE IT ★ ★ ★ ★

And it will be to your advantage to talk over with Michaels your metal building materials requirements. Since 1870 we have been designing and fabricating in metal the building products specified by architects and builders, and the knowledge acquired during more than three-fourths of a century is at your disposal. The products shown in The Architectural Handbook, illustrated, or special creations of architects will be carefully and faithfully executed in metal to the most exacting specifications. Whatever you need, if it's made of stainless steel, aluminum or bronze, be sure to contact Michaels first. Write for literature. The partial list at the right gives you an idea of the wide range of Michaels products.

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Name Plates
Astragals (adjustable)
Stair Railings (cast and wrought)
Wrought and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
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Extruded Thresholds
MI-CO Parking Meters
Museum Trophy Cases

The MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.

Representatives Wanted

NEWS FROM CANADA

(*Continued from page 10*)

clared no government of which he was a part would ever subsidize housing. Six months ago he stated housing subsidies were not needed to sustain residential construction. Now he says, "The Federal Government has not a closed mind on this question."

Thus the plea made by C.C.A., a kindred but unaffiliated group, has set the National House Builders' Association on its ear. One of its unofficial spokesmen declares, "Sure, we're against subsidies. Big general contractors want them because public housing will provide a hedge against a drop in industrial and commercial construction. But using the taxpayers' money to provide cheap rental housing would be disastrous to builders erecting houses for sale."

Canada Led in 1948 Starts

The current issue of "Housing Progress Abroad," a quarterly report published by Central Mortgage and Housing Corporation, notes that housing starts in Canada increased more rapidly in 1948 than in any of the other countries for which comparable data are available.

Starts of new units and conversions in Canada rose 17 per cent from 81,000 in 1947 to an estimated 95,000 in 1948. In the United States non-farm starts increased 10 per cent from 854,000 to an estimated 940,000 during the period. Starts in Australia rose from 50,000 to 55,000, an increase of 10 per cent. In both the United Kingdom and Sweden starts declined moderately as a result of government curtailment of the investment program.

Quebec Architects Congregate

J. C. Meadowcroft was elected president of the Quebec Association of Architects at its annual meeting, recently held in Quebec City. Other new officers are: first vice president, Pierre C. Amos; second vice president, H. Ross Wiggs; honorary treasurer, Emile Venne; honorary secretary, Maurice Payette. All are from Montreal.

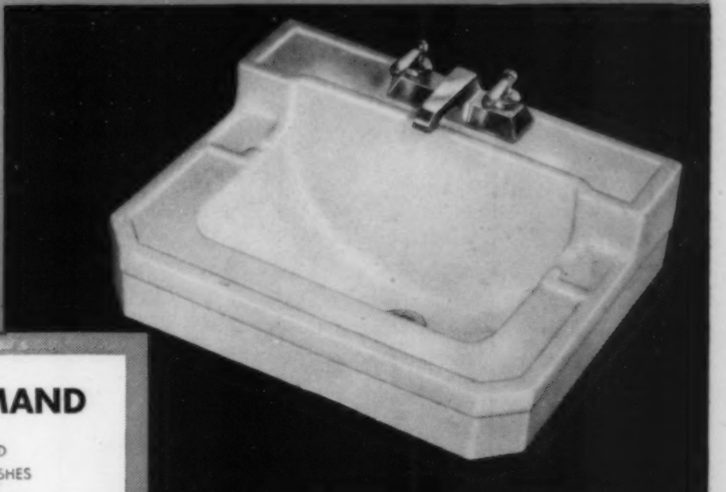
Guest speaker at the annual luncheon was Mr. Gerard Morisset, Quebec director of art education and inventory director of provincial art works. He chose for his subject "The Canadian Home" and expressed the opinion that "houses of the 17th and 18th centuries were especially built for interior design

(*Continued on page 156*)

It's New! It's Neat!

IT'S PERFECT FOR THE MODERN HOME!
THE RICHMOND RICHLEDGE

***MODERN HOMES** demand modern plumbing. Richmond's compact new Richledge—designed with this in mind—has all the big lavatory features yet it's only 18" x 15" overall! This low-priced wall-hung unit fits into the most modern bathroom or powder room—no matter how small the space. . . .*



Chrome legs and towel bars available.

FEATURES YOUR CUSTOMERS DEMAND

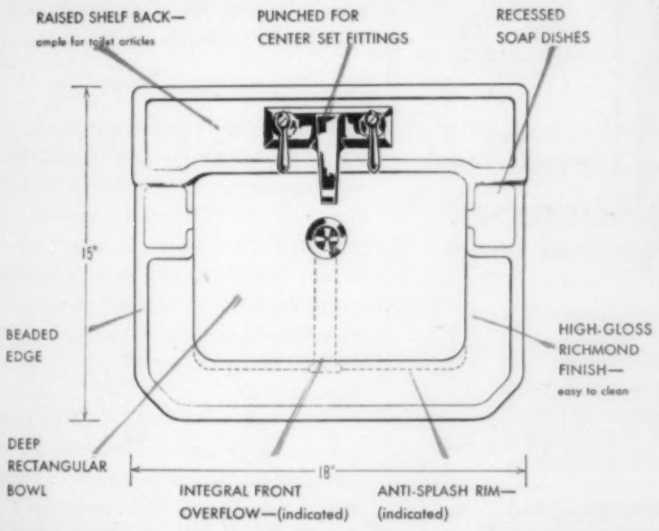

RAISED SHELF BACK—
ample for toilet articles
PUNCHED FOR CENTER SET FITTINGS
RECESSED SOAP DISHES
15"
BEADED EDGE
HIGH-GLOSS RICHMOND FINISH—
easy to clean
DEEP RECTANGULAR BOWL
18"
INTEGRAL FRONT OVERFLOW—(indicated)
ANTI-SPLASH RIM—(indicated)

PLATE NO OF LAVATORY-G-152

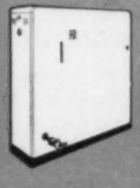
*. . . The **RICHLEDGE** will help you get those modernization jobs, as well as new installations, started now. Combining the highest quality with the lowest possible price—it is a timely addition to the Richmond line of fine vitreous china.*

RICHMOND

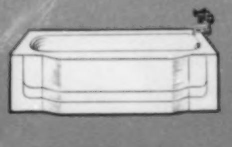
RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

Richmond's whiter-white enameled cast iron sinks are at home in any kitchen.

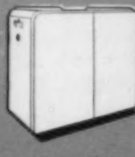
Vitreous China



Gas Boilers



Enameled Cast Iron Ware



Winter Air Conditioners
Gas—Cast iron or steel
Oil—Steel

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Richmond Radiator Company
19 East 47th Street, New York 17, N.Y.

Please send me complete information on the Richmond vitreous china line—including the new Richledge. No obligation, of course.

Name..

Company..

Address..

Where Wood Needs Protection from DECAY and TERMITES

WOLMANIZED Reg. U. S. Pat. Off.
PRESSURE TREATED LUMBER

. . . lasts 3 to 5 times longer

Water Tanks
Sills and Joists
Cooling Towers
Roof Decks
Humidified Buildings
Foundations
Floors
Other Moisture "Traps"

Here are six common conditions where WOLMANIZED Pressure-Treated Lumber provides protection from decay and termites:

1. Where excessive ground moisture, rain or thaws cause early decay failures.
2. Where wood near the ground is open to termite attacks.
3. Where wood is in contact with damp concrete or masonry.
4. Where steam and vapor from industrial processes promote wood decay.
5. Where walls, floors, ceilings are subject to condensation from refrigeration.
6. Where wood is exposed to moisture in artificially humidified buildings.

Investigations by qualified technologists prove that on installations where decay and termites ordinarily shorten lumber life, WOLMANIZED Pressure-Treated Lumber lasts *Three to Five Times Longer* than untreated wood.

Such lasting protection is assured because penetrating, preservative solutions are forced, by vacuum-pressure treatment, deeply into the wood fibers of WOLMANIZED Lumber. And, WOLMANIZED Lumber is clean, odorless, paintable, non-corrosive, non-leaching and glueable. Only WOLMANIZED Lumber offers *all* these extra advantages.

FIND OUT HOW WOLMANIZED LUMBER GIVES YOUR CLIENTS EXTRA VALUE

This informative booklet tells you all the facts about WOLMANIZED Lumber, and how it saves time and money for your clients. Be sure to have a copy—write for yours today.

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Branch Offices: Baltimore, Boston, Jacksonville, Fla., Los Angeles, New York, Philadelphia Portland, Ore., San Francisco, Washington, D. C.

NEWS FROM CANADA

(*Continued from page 154*)

Toronto's new Bank of Montreal Building: Chapman, Oxley & Facey, Marani & Morris, Architects; K. R. Blatherwick, Associate

and comfort whereas today, they are designed mostly for exterior appearance." Seldom has a professional audience been rebuked more graciously.

Housing not up to City?

When it comes to knowing what to do about housing, Toronto yields to no municipality in the extent of its confusion. On one hand, it is proposed that housing commitments be increased even if this means annexing a neighboring township. On the other, it is suggested that several housing projects now operated publicly be turned over to private management.

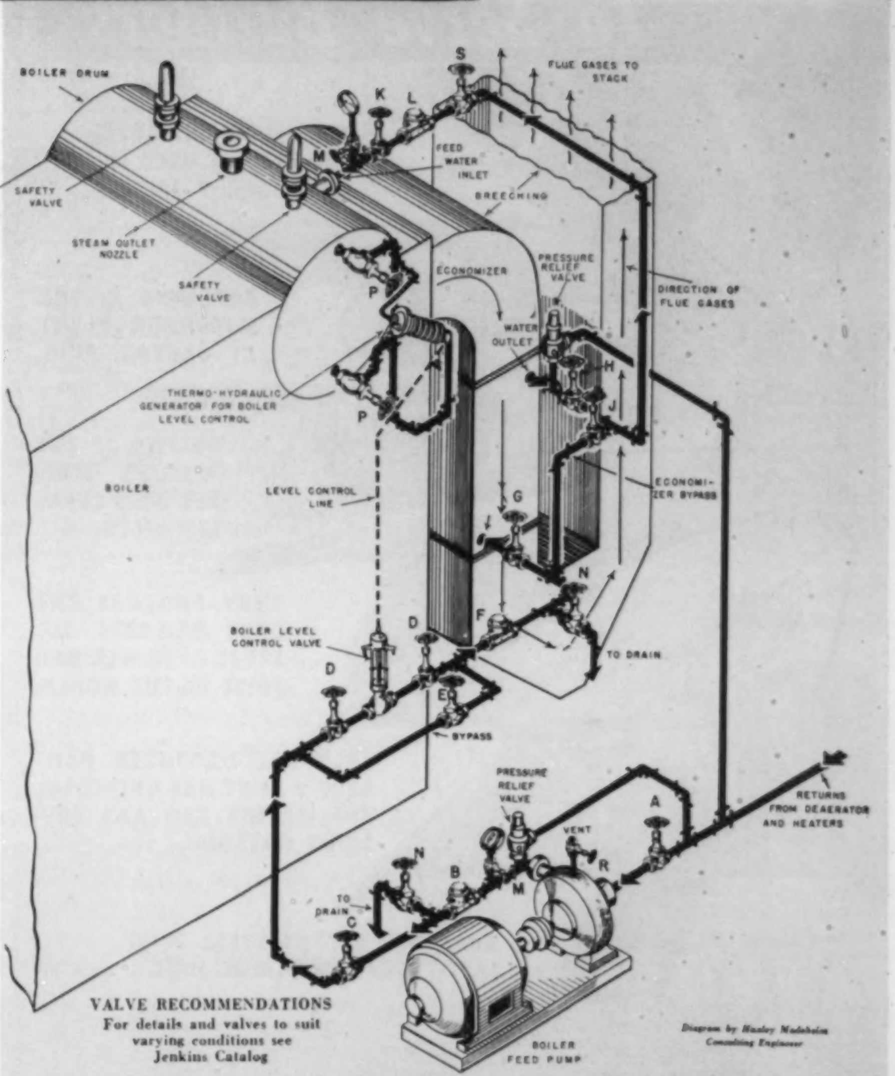
Other cities and towns facing a similar problem may find guidance in a recent editorial in the *Telegram*, a Toronto daily. "Housing," the newspaper declares, "is not in essence a municipal responsibility because the present basis of municipal taxation fails to distribute a responsibility of that kind in an equitable manner."

Going on to the local issue involved, the *Telegram* points out that there's little reason in a system which grants partial tax exemptions to small home owners to help them carry their homes while, at the same time, it imposes taxes on them to subsidize homes for others, some of whom receive larger incomes than their tax benefactors. "Neither is there logic in the thinking of some members of the council, who contend that high taxes will drive business out of town, when they agree to tax business

(*Continued on page 158*)

Jenkins PRACTICAL PIPING LAYOUTS 40

How to plan BOILER ECONOMIZER PIPING


BOILER DRUM
SAFETY VALVE
STEAM OUTLET NOZZLE
SAFETY VALVE
S
K
L
M
FLUE GASES TO STACK
FEED WATER INLET
BREECHING
ECONOMIZER
PRESSURE RELIEF VALVE
DIRECTION OF FLUE GASES
P
WATER OUTLET
H
J
THERMO-HYDRAULIC GENERATOR FOR BOILER LEVEL CONTROL
P
BOILER
LEVEL CONTROL LINE
ECONOMIZER BYPASS
G
N
F
D
BOILER LEVEL CONTROL VALVE
TO DRAIN
D
E
BYPASS
PRESSURE RELIEF VALVE
A
RETURNS FROM DEAERATOR AND HEATERS
VENT
N
B
R
M
TO DRAIN
C
BOILER FEED PUMP

VALVE RECOMMENDATIONS
For details and valves to suit
varying conditions see
Jenkins Catalog

Diagram by Hasley Madsheim
Consulting Engineer

This economizer hookup contributes considerably to high boiler operating efficiency and reduces fuel costs by bringing the water as near to boiler temperature and pressure as possible before it enters the boiler. This is accomplished by extracting heat from exhaust gases with an economizer.

Water feed is controlled by any of the various types of boiler level controls. The one shown is a thermo-hydraulic generator in which the water column serves as the generator. A change in the boiler water level changes the temperature and the fluid pressure in the outer tube and operates the control valve hydraulically.

The more efficient counterflow heat transfer, used in this economizer, is preferred to the parallel flow type wherever installation is possible. Pressure relief valves are required on the economizer outlet, and a by-pass allows the boiler to be operated even though some of the tubes fail.

Consultation with accredited piping engineers and contractors is recommended when planning any major piping installation. Copies of Layout No. 40, enlarged, with additional information, will be sent on request. Just mail the coupon.

A CHOICE OF OVER 500 VALVES

To save time, to simplify planning, to get all the advantages of Jenkins specialized valve engineering experience, select all the valves you need from the Jenkins Catalog. It's your best assurance of *lowest cost in the long run.*

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Jenkins Valves				
Code	**Quan.**	**ASME Rat. To 160#**	**ASME Rat. 160#-240#**	**Service**
A	1	Fig. 270-U	Fig. 280 Bronze Gate	Boiler Feed Pump Suction
B	1	Fig. 762	Fig. 962 Bronze Swing Check	Pump Discharge—Prevent Backflow
C	1	Fig. 950	Fig. 970 Bronze Globe	Pump Discharge Shutoff
D	2	Fig. 270-U	Fig. 280 Bronze Gate	Level Control Valve Shutoff
E	1	Fig. 950	Fig. 970 Bronze Globe	Manual Bypass of Level Control Valve
F	1	Fig. 762	Fig. 962 Bronze Swing Check	Prevent Backflow
G	1	Fig. 270-U	Fig. 280 Bronze Gate	Economizer Water Inlet Shutoff
H	1	Fig. 270-U	Fig. 280 Bronze Gate	Economizer Water Outlet Shutoff
J	1	Fig. 270-U	Fig. 280 Bronze Gate	Economizer Bypass
K	1	Fig. 270-U	Fig. 280 Bronze Gate	Boiler Feed Water Piping to Boiler
L	1	Fig. 762	Fig. 962 Bronze Swing Check	Prevent Backflow from Boiler
M	2	Fig. 743-G	Fig. 705 Bronze Needle.	Pressure Gage Control
N	2	Fig. 950	Fig. 970 Bronze Globe	Drain Valves
P	2	Fig. 952	Fig. 972 Bronze Angle	Taps to Boiler Drum for Level Control
R	1	Fig. 743-G	Fig. 705 Bronze Needle	Pump Vent
S	1	Fig. 950	Fig. 970 Bronze Globe	Boiler Feed to Boiler Drum

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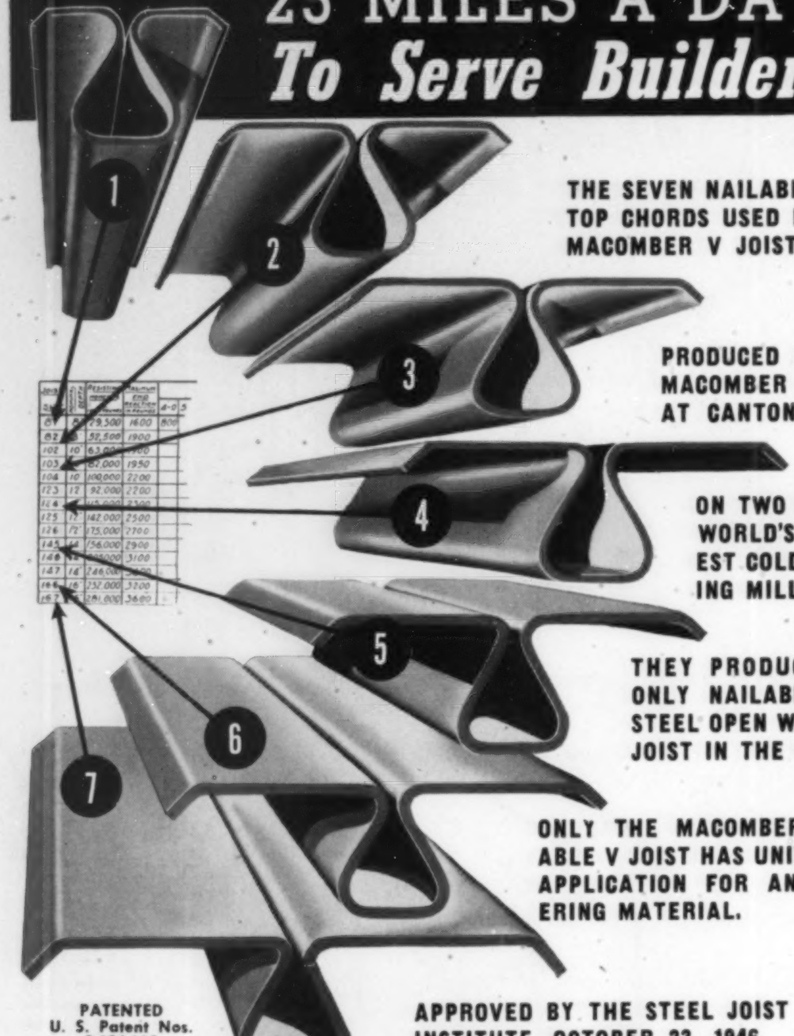

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ONLY THE MACOMBER NAILABLE V JOIST HAS UNIVERSAL APPLICATION FOR ANY COVERING MATERIAL.

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YOU CAN SPECIFY Macomber Nailable V Bar Joists from any standard steel joist loading table.

YOU GET EXCLUSIVE STRUCTURAL ADVANTAGES found only in the one steel joist of universal application to any joist job you can design.

YOU GET HOLDING STRENGTH that is far greater than any nail driven into wood nailing strips.

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CANTON, OHIO

IN MEXICO D. F.—MACOMBER DE MEXICO S.A. CEDRO 500

STANDARDIZED STEEL BUILDING PRODUCTS

NEWS FROM CANADA

(*Continued from page 156*)

for projects which render no municipal services to them."

The newspaper feels that housing is primarily a federal and provincial responsibility. It is convinced that gradual removal of the burden borne by municipal taxpayers should be the goal of Toronto's housing policy. Any saving in the financial obligations incurred by the city in managing its present housing projects would be wiped out if it assumed new commitments. "Council," the *Telegram* concludes, "will have to make up its mind on this elementary point—whether it proposes to reduce taxes, or undertake additional housing. It cannot achieve both at the same time."

Edmonton Spurns Federal Offer

Reconstruction Minister R. H. Winters says the Dominion Government is prepared to build houses for veterans "to the limit of the available supply of labor, materials and serviced land."

But does federal assistance bear too high a price tag? Edmonton, Alberta, a city bursting at the seams as a result of the boom in oil and uranium, thinks so. Desperate as its shelter situation is, it recently turned down a proposal from Central Mortgage and Housing Corporation for the erection of 500 low-rental houses for ex-servicemen in 1949.

The scheme would have cost the city $1,422,000 in subsidies. The initial subsidy would have been $359,500 on the basis of $719 per house for land and services. Annual subsidies would have amounted to $21,250 in taxes, or an additional $1,062,500 during the 50-year life of the project. The houses would have yielded Edmonton $72.50 each per year, or $42.50 less than the tax revenue produced by an average, privately owned dwelling.

In making their report, the city commissioners stated that "in view of the large amount of subsidization already assumed . . . in constructing 1200 houses, built or being built under similar schemes, and further, since the only argument advanced is that the houses are for returned men for whom the federal government should assume full responsibility, (we) are opposed to any further municipal subsidization of this type of housing."

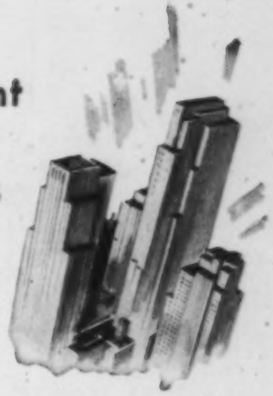
Edmonton's decision spotlights an issue on which Central Mortgage and

(*Continued on page 160*)

aluminum

. . . enduring
as a
Cathedral

. . . efficient
as Modern
Business



The aluminum that covers the cupola of the church of San Gioacchino, in Rome, stands substantially unchanged after more than half a century. The same advantages of rustproof permanence and freedom from maintenance dictate its use in industrial roofing and siding.

These two extremes also demonstrate the architectural versatility of aluminum. Its soft-white natural color is attractive, particularly with Reynolds new embossed textures. And though aluminum requires no protective painting, interesting color effects are easily achieved as in the photograph below.

Reynolds, whose historic entry into aluminum production stimulated a vast increase in tonnage, is especially concerned with the *product development* of this modern material—as in building materials. Reynolds *Lifetime* Aluminum Gutters and Downspouts are an example... offering freedom from rust and from wall-stain at about half the price of other rustproof materials.

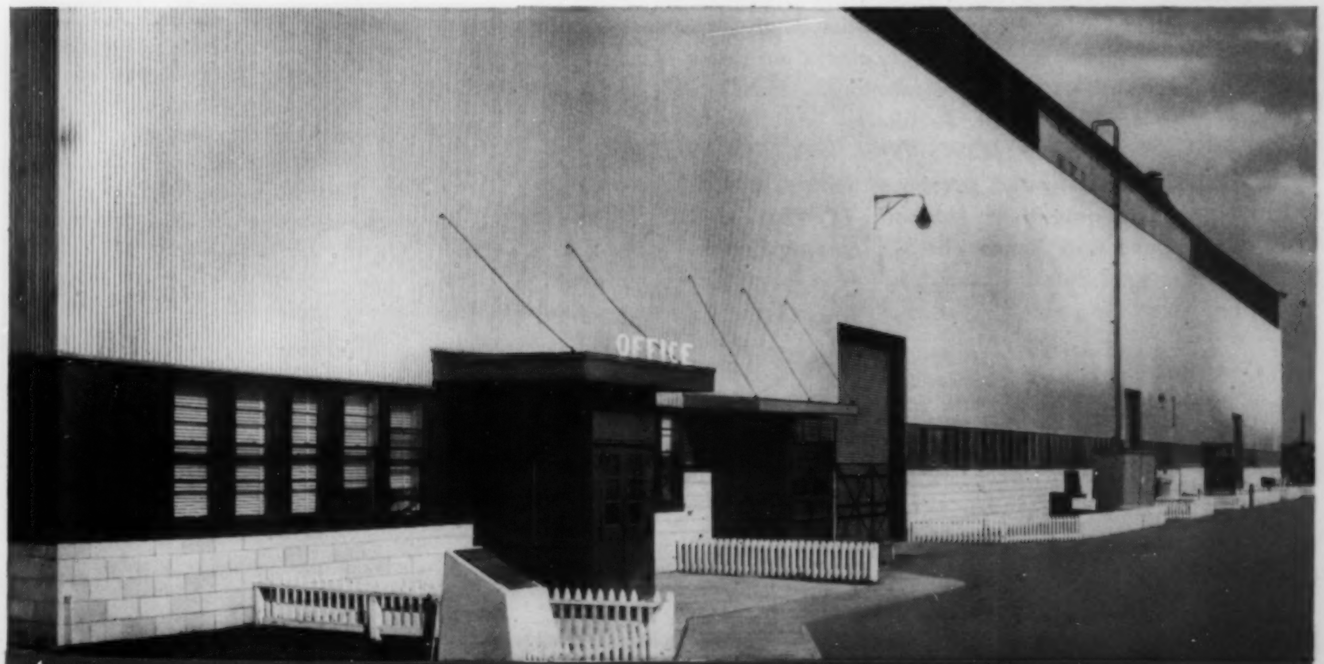
From roofing, siding, and windows to architectural shapes, Reynolds steadily extends the usefulness of aluminum in building. For descriptive literature in A.I.A. file form, please write:

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

REYNOLDS METALS COMPANY,
Building Products Division,
Louisville 1, Ky., offices in
32 principal cities

REYNOLDS *Lifetime* ALUMINUM



War Assets Administration building, Lansdowne, Md., occupied by Westinghouse. Siding specification: Reynolds *Lifetime* Aluminum Corrugated, .019" thickness, 2½" corrugation. Contractor: Cummings-Hart Construction Company, Baltimore, Md.

FOR ALL-AROUND ECONOMY, SPECIFY MESKER STEEL RIVETED ROOF TRUSSES!

A recent Mesker Steel Riveted Bowstring Truss Structure for the U. S. Government in Florida.

MESKER STEEL

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MEAN SAFETY—also a great Saving in Construction Cost. In design, the natural arch shape produces positive proven strength, while employing a minimum amount of steel in fabrication. RIVETED STEEL BOWSTRING TRUSSES, truly a Mesker innovation, in addition to accepted *Safety,* offers flexibility, neater designing and completely clear floor space. Masonry cost on truss ends is held to a mimimum. Mesker Steel goes "all out" to cooperate with Architects, Engineers and Builders in producing *RIVETED BOWSTRING TRUSS CONSTRUCTION* for additional safety and greater economy.

Take advantage of Mesker's 70 years of experience and "know how" by specifying Mesker Steel Prefabricated Products in Building or Remodeling plans.

Write Department "A" for new and interesting detailed description, price and engineering information.

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REPRESENTATIVES WANTED! Mesker desires capable and responsible representatives! Many productive territories open. Write to Executive Vice President in Charge of Sales, Geo. L. Mesker Steel Corp., Evansville 8, Indiana.

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GEO. L. MESKER STEEL CORP.

EVANSVILLE 8, INDIANA

NEWS FROM CANADA

(*Continued from page 158*)

the National House Builders' Association have long been at loggerheads. The builders claim their operations are hamstrung by the Corporation's refusal to increase its lending values. They suggest appraisals under the National Housing Act run so far below actual costs that buyers must resort to second and even third mortgage financing to raise the necessary down payment. In pleading for more generous treatment they say "Discourage a man from easy buying and, under present conditions of supply, you automatically encourage unsupportable demand from renters."

Apprentices get Pre-job Training

The Dominion Department of Labor has launched a campaign to increase the number of apprentices entering the building trades. It proposes to broaden the Dominion-Provincial apprenticeship training program so as to provide class training for construction recruits before they actually go to work. At present, class training in Dominion-Provincial trade schools is given only during apprenticeship, and the only pre-apprenticeship training offered is that carried on in a limited way by technical and vocational high schools.

The new plan, which is promised a warm welcome by the provinces, is similar to the one followed in the now-completed veterans' rehabilitation training program. It should reassure construction industry leaders who have despaired of seeing any increase in enthusiasm on the part of either contractor-employers or Canadian youths for apprenticeship training. They've often expressed fear that, even if building volume should decline substantially during the next few years, there still would be a shortage of skilled mechanics.

Winnepegers Help Plan City

Winnepeg is an important western center of retail and wholesale trade, meat packing, railways, manufacturing and service establishments. Alone, it has a population of 230,000. Including its suburbs, it has a population of 315,000.

As often happens, the political boundaries of the city and the municipalities surrounding it bear no relationship to the physical development of the area. When the Metropolitan Plan organiza-

(*Continued on page 162*)

No Home's too small to have *Non-Rust* Piping...

...not when it's possible to install Anaconda Copper Water Tubes with solder-type fittings at a price usually competitive with rustable piping.

Copper Water Tubes are fast becoming the standard for hot and cold water and forced circulation heating lines. For such piping we recommend you specify tubes no lighter than Types K and L. Type M tubes in sizes 1¼" to 12" are made only for waste, drain and vent lines... wherever codes permit.

Today there's no end to the uses for copper tubes in homes, in industry and on the farm. Of course 85 Red Brass Pipe is still considered the *ne plus ultra*. But it's reassuring to know that wherever copper tube is installed, the owner is getting outstandingly sound value for his money.

Anaconda Copper Water Tubes, together with Anaconda Fittings, both solder and flared types, are carried in stock by leading plumbing supply houses.

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TO BRIGHTEN AND PROTECT

For bright, protective Cement Paint . . .
ATLAS WHITE CEMENT

There's a happy marriage of beauty and utility in factory-prepared portland cement paint, made with Atlas White Cement. There's bright, refreshing whiteness or color. And, when applied to concrete, concrete masonry, stone, brick or hollow tile this handsome finish penetrates the pores, forming a protective coating that resists moisture, dirt and dust.

Besides its decorative utility in portland cement paint, Atlas White Cement, when used as a matrix, also brings out clearly and permanently the rich values of color pigments and aggregates used in Terrazzo, Stucco and Architectural Concrete Slabs. An infinite variety of color tones and shadings is possible.

Atlas White Cement complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Concrete made with Atlas White Cement cleans easily. Maintenance costs are low.

For further information *on the uses of Atlas White Cement, see SWEET'S Catalog, Section 4B/3 and 13C/5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.*

AR-D-26

FOR BEAUTY AND UTILITY
ATLAS WHITE CEMENT
FOR TERRAZZO, PAINT, SLABS, STUCCO

A UNIVERSAL ATLAS PRODUCT

"THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries*
Sunday Evenings—ABC Network

NEWS FROM CANADA

(*Continued from page 160*)

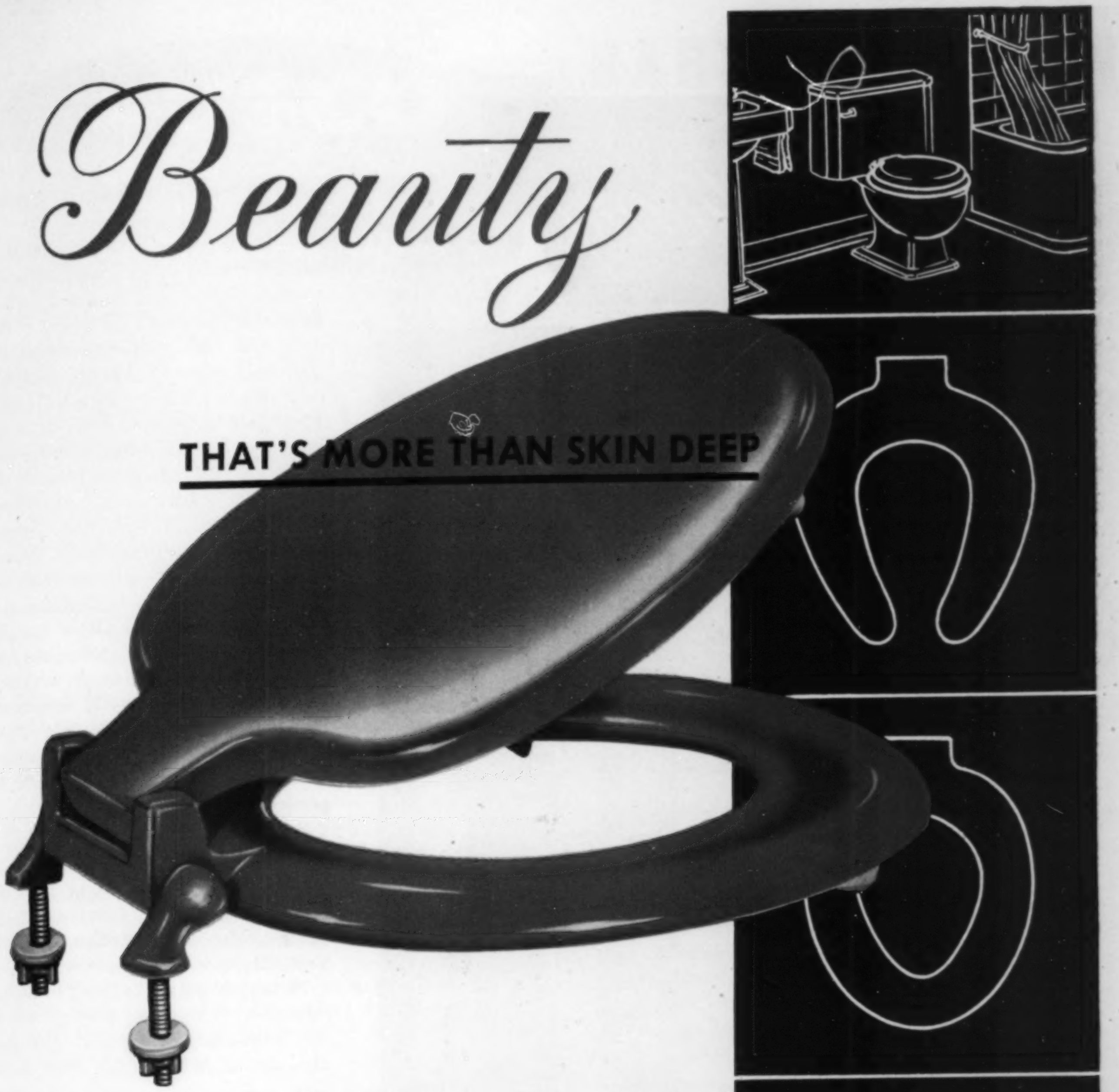
tion was formed (by cooperation of the Winnepeg Town Planning Commission and the Metropolitan Planning Committee) it wisely recognized the necessity for treating the entire urban area as a single unit. And, from the first, the Plan's executive sought to benefit from the ideas and experience of citizens who would be affected by its proposals.

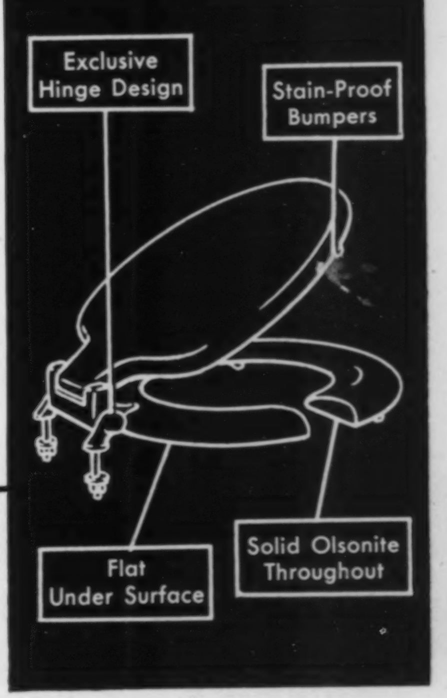
Advisory committees were set up to study the various phases of planning: Thoroughfares, transit, transportation, housing, schools, recreation, the central business district, and zoning. Each committee consisted of from nine to 15 members, men and women known for their interest and ability in civic affairs whose names were submitted by official bodies or public organizations.

Zoning demonstrates the typical course taken by public participation in planning Winnepeg. The proposals dealing with this subject have been under continuous scrutiny since they were formulated three years ago. First they were studied by the citizens' advisory committee on zoning, which reported its findings to the Metropolitan Plan executive. Following this, the executive made the necessary revisions and had the proposals printed in the form of a draft zoning by-law and map. These were circulated to the public. Open meetings were then held and further discussion took place, resulting in additional suggestions for improvement. The executive acted upon these suggestions as far as it was reasonable to do so and then prepared the zoning by-law and map for formal submission to the various municipal councils.

It's expected that approval of the city of Winnepeg is only a matter of course, and once it's given the suburbs will follow the senior municipality's lead. Indeed, many are so confident the public will accept the zoning proposals that they already are using the by-law, even though it isn't officially in force!

Similar procedure has been, and is being followed in preparing the other proposals contained in the Greater Winnepeg plan. It appears to have considerable merit. The citizens know, as a result of their participation, what's being planned, and why. They're inclined to press for action on the proposals, rather than put obstacles in the way of their adoption.


Beauty
THAT'S MORE THAN SKIN DEEP


Exclusive Hinge Design
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Flat Under Surface
Solid Olsonite Throughout

Bathroom beauty and long life, are but two features that keynote solid Olsonite seats. Their beauty and durability has convinced industry and home owners alike, that there is no better seat. Whenever solid Olsonite is specified—chip proof, peel proof, stain proof, fire and wear resistant, long life is assured. See your plumbing and heating distributor, jobber or contractor.

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Modern living . . . .

. . . calls for a

Shower Cabinet

in the bathroom

So much personal comfort and satisfaction can be obtained at so low a comparative cost that a shower cabinet has become one of the best values in making homes more desirable to owners and prospective purchasers.

A shower cabinet is a natural companion to the other fixtures in the present day bathroom, and is recognized by architects and builders as one of the strongest features for classifying a home as modern in both the higher priced and lower cost brackets.

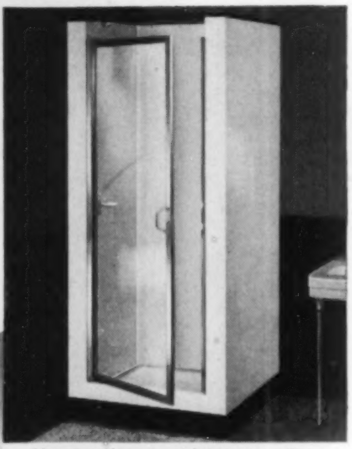
FIAT SHOWER CABINETS

- make houses more saleable.
- make the menfolk happy and are a source of pride to the housewife.
- are in harmony with other modern features in the home that make for easy living.
- add an air of distinction and luxury to the bathroom even when lower priced units are installed.

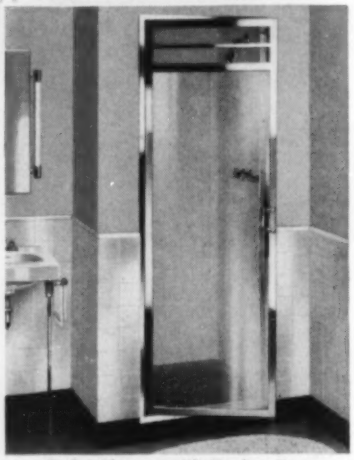
— THERE IS A FIAT SHOWER MODEL TO FIT EVERY BATHROOM —

- the low cost Skipper Shower with Neptune Glass Door.
- the medium priced Cadet Shower with Zephyr Door.
- the highest class shower cabinet ever built, the Commodore, suitable for the finest luxury installation.

A complete catalog with specifications of all Fiat Shower Cabinets is available in Sweet's Architectural File section 24b/1 and Building File section 6a/6 or write for catalog.



Skipper Shower with Neptune Door



Cadet Shower with Zephyr Door

Commodore — 2000-C

Fiat Metal Manufacturing Company

1203 Roscoe St., CHICAGO 13, ILLINOIS
LONG ISLAND CITY 1, N. Y. LOS ANGELES 33, CALIF.

In Canada Fiat Showers are manufactured by Porcelain and Metal Products, Ltd., Orillia, Ont.

THE RECORD REPORTS

(*Continued from page 24*)

adaptable to a modernized building industry.

— The Producers' Council has a story to tell home builders and architects about savings in cost of house construction as proven at the University of Illinois. And P.C., cooperating with the National Lumber Dealers Association, is preparing to tell that story in a big way. These two organizations sponsored the Industry Engineered House studies and now are prepared to show that a 21 per cent saving in labor cost brings a 10 per cent reduction in overall cost of small homes. The Illinois experiment showed these savings resulting largely from use of roof trusses and non-load-bearing partitions. This technique allows completion of most of the house before the partitions are erected. As a result, workmen are given greater freedom of movement, plumbing installation time is cut 32 per cent and time for construction of interior walls, ceilings, partitions and floors, 38 per cent.

ON THE CALENDAR

Through April 17: "From Le Corbusier to Niemeyer," architectural exhibition, Museum of Modern Art, New York City.

Through May 1: "The Exact Instant," exhibition of American news photography assembled by Edward Steichen, Museum of Modern Art, New York City.

April 8 — indefinite: "The Legacy of Greece and Rome," special exhibition, Metropolitan Museum of Art, New York City.

April 11–15: 6th Western Metal Congress and Exposition, Shrine Auditorium, Los Angeles.

April 19–21: South West District Meeting, American Institute of Electrical Engineers, Baker Hotel, Dallas, Texas.

April 20–23: Spring Meeting, American Society of Civil Engineers, Oklahoma City, Okla.

May 1–27: Inaugural Exhibitions in the new building, and 26th Annual May Show of works by local artists, The Akron Art Institute, Akron, Ohio.

May 2–4: 3rd Annual National Meeting of the Forest Products Research Society, Civic Auditorium, Grand Rapids, Mich.

May 5–6: 7th Annual Anthracite Con-

(*Continued on page 166*)

RUSCO

All Metal, Self-Storing

COMBINATION SCREEN -AND STORM SASH

Gives You **YEAR 'ROUND COMFORT, CONVENIENCE, SAFETY AND ECONOMY . . . OFFERS "MAGIC PANEL" VENTILATION . . . SELF-STORAGE . . . PATENTED THERMOLOK* CLOSURE FRAME . . . AND MANY OTHER YEAR 'ROUND ADVANTAGES.**

One of the products of The F. C. Russell Co. . . . all of which are self-liquidating investments in comfort, convenience, safety.

A nationwide network of competent, reliable distributors and a staff of experienced field engineers give assurance that The F. C. Russell Company products you specify will be installed in accordance with your specifications. These same distributors and field engineers are at your service to give you the benefit of their wide experience with problems of insulation and protection for all types of windows—for homes, commercial buildings, institutions.

Consult Sweet's Catalog, your local Russell Distributor, or write direct for complete details and specifications on all The F. C. Russell Company products.

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THERMOSEAL three-in-one combination window.

The F. C. Russell Company line of combination windows offers a wide choice of designs to fit specific requirements . . . steel, aluminum, wood . . . all properly treated for weather resistance. ALUMINUM CASEMENT STORM SASH . . . RUSCO ALL-METAL, VENETIAN-TYPE AWNINGS . . . RUSCO ALL-METAL JALOUSIES . . . RUSCO ALL-METAL TERRACE AWNINGS . . . RUSCO ALL-METAL DOOR CANOPY . . . CINCINNATI CUSTOM-BUILT INSECT SCREENS . . . DUO-GLAZE INSULATION . . . THERMOPANE (with patented adjustable closure frame for picture windows).

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World's Largest Manufacturer of Combination Windows

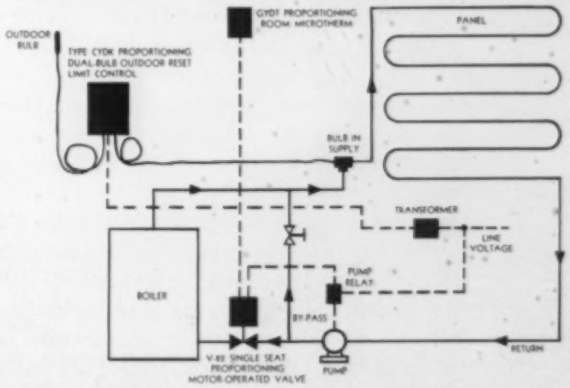
BARBER-COLMAN

BARBER COLMAN
Inside Bulb with ½" water tight fitting.
Thermostat Case with dial to set minimum water temperature for 70° out doors.
Outdoor Bulb, can be mounted in any position.
15-foot capillary tubes connect Bulbs and Case.
Protective Shield for Outdoor Bulb.

DUAL BULB OUTDOOR RESET

Hot Water Limit Control

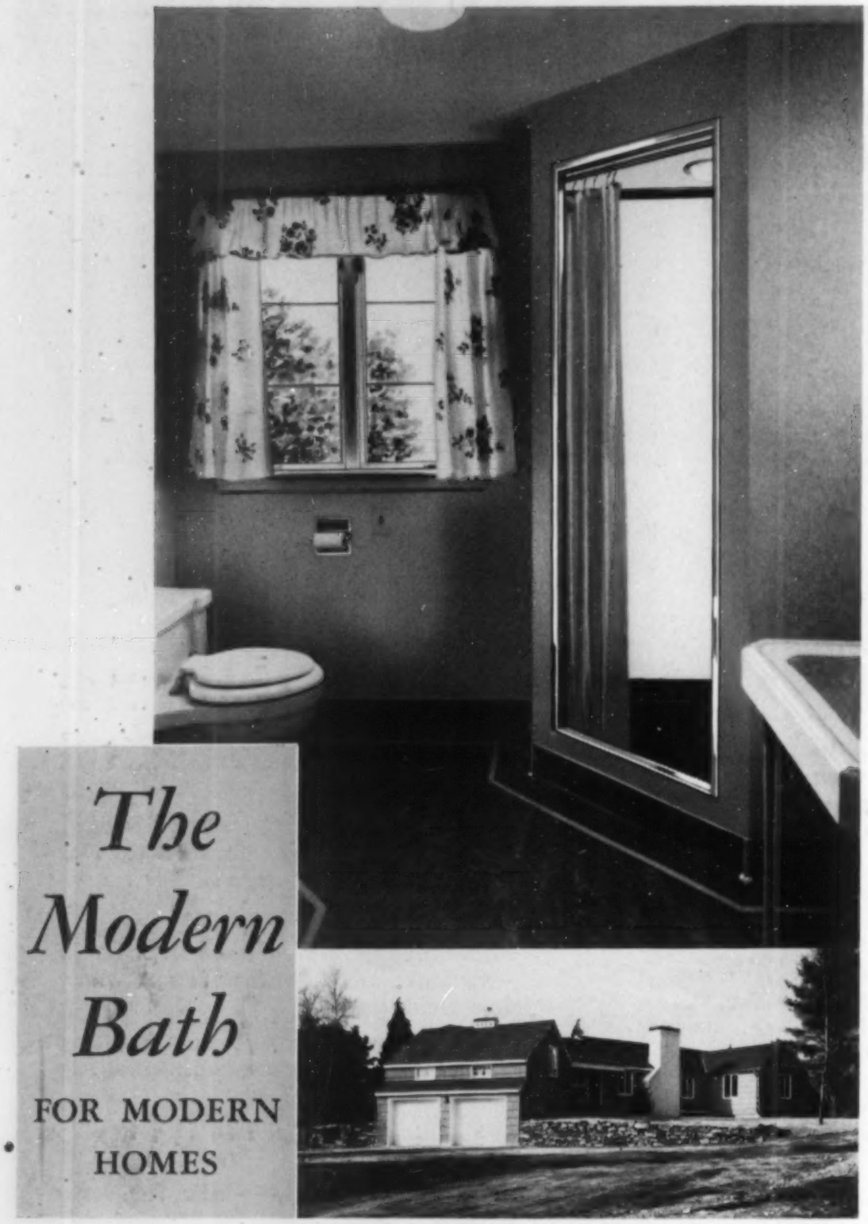
- ***A new addition to the ever-growing list of Barber-Colman Controls for Hot Water Heating Systems.***
- ***Ideal for application to panel systems.***
- ***Automatically varies control point in accordance with outdoor temperature changes.***
- ***Prevents excessive overshooting and undershooting, overcomes thermal lag in system.***
- ***Available in 3 ratios: 1 to 1½, 1 to 1, 1½ to 1.***
- ***Write for literature — ask for Data Sheet F-3833.***


OUTDOOR BULB
TYPE CYDK PROPORTIONING DUAL-BULB OUTDOOR RESET LIMIT CONTROL
GYDT PROPORTIONING ROOM MICROTHERM
PANEL
BULB IN SUPPLY
TRANSFORMER
LINE VOLTAGE
PUMP RELAY
BOILER
BY-PASS
V-89 SINGLE SEAT PROPORTIONING MOTOR-OPERATED VALVE
PUMP
RETURN

Block diagram illustrates application with proportioning room thermostat (Microtherm) on panel system; constant boiler temperature.

BARBER COLMAN

BARBER-COLMAN COMPANY
1232 ROCK ST., ROCKFORD, ILLINOIS



in Traditional or Contemporary Style

Weisway *quality* Cabinet Showers are the practical answer to the rapidly growing demand for separate shower baths. Notice the fine "built-in" appearance of the Weisway—with in-a-wall adapter—in this recently completed Connecticut home. Precision-fabricated to be permanently leakproof, Weisway walls are available finished with high temperature baked enamel or vitreous porcelain—and the receptor is enameling iron with exclusive Foot-Grip, No-Slip floor of vitreous porcelain. Completely independent of building walls or floor, Weisways are not affected by shrinkage or settling. No matter what the architectural style of the home, Weisways are perfectly suited for use with the latest building materials and techniques. Weisway quality construction protects your reputation, assures client satisfaction through the years. Write for detailed information about available models.

Weisway

CABINET SHOWERS

HENRY WEIS MFG. CO., INC., 403 WEISWAY BLDG., ELKHART, INDIANA

THE RECORD REPORTS

(*Continued from page 164*)

U. S. Navy Photo

The new theater at the Great Lakes Naval Hospital provides special accommodations for 14 wheel chair or stretcher patients with their attendants, 50 crutch and 567 ambulatory patients. Crutch and wheel chair section is directly off center aisle and close to exit ramp for safety in case of fire. Crutch patients have ample leg room, plus convenient foot rests and crutch racks (designed and built by Hospital Public Works Department)

ference, Lehigh University, Bethlehem, Pa.

May 13–14: Annual Meeting, Pennsylvania Society of Architects of the A.I.A., Hershey Hotel, Hershey, Pa.

May 19-21: Southern Conference on Hospital Planning, Buena Vista Hotel, Biloxi, Miss.

June 3–30: Annual Akron Art Institute School Exhibition, Akron Art Institute, Akron, Ohio.

June 9–24: 9th Antique Dealers' Fair, Grosvenor House, London, Eng.

June 19–24: 3rd Annual Store Modernization Show, Grand Central Palace, New York City.

June 20–23: 42nd Annual Meeting, National Association of Building Owners and Managers, Mount Royal Hotel, Montreal, Canada.

June 20–24: Summer General Meeting, American Institute of Electrical Engineers, New Ocean House, Swampscott, Mass.

HOSPITAL CONFERENCE

Biloxi, Miss., will be the scene next month of the Southern Conference on Hospital Planning, which promises to be one of the year's most important conferences for hospital architects. Sponsored by Dixie chapters of the A.I.A., hospital agencies and state health departments,

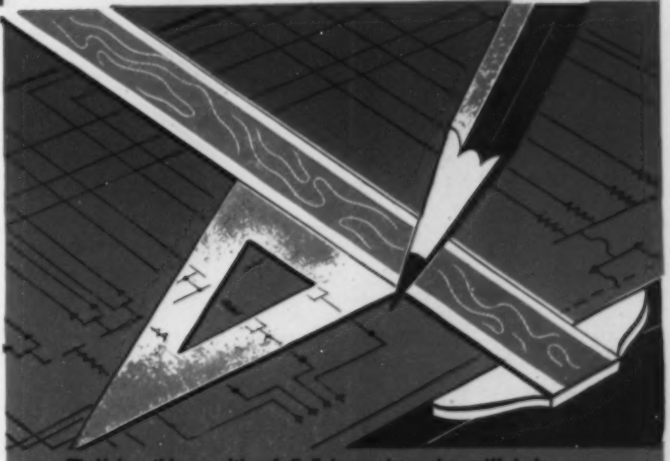
(*Continued on page 168*)

How building designers can get an **electrical layout that fits** ...and save time and money doing it!

1 Before your draftsmen touch pencil to paper, call, wire or write your nearest General Electric Office; an experienced building specialist will contact you.

2 Outline to him your preliminary plans and problems; show him the type and location of all electrical loads, special conditions which must be met.

3 At his disposal are many General Electric product engineers . . . authorities in the fields of power distribution, lighting, motors and control.



4 Using this wealth of G-E know-how, he will help you plan an integrated electrical system, around which you can easily draw up plans and specifications.

RESULTS: You save planning time and come up with electrical plans that fit your structure . . . plans that embody all up-to-the-minute electrical developments . . . specifications that assure the building owner maximum operating economies over the years, and establish your reputation for future jobs. Try this easy, 4-step planning method on your next job . . . you'll find it both profitable and enjoyable to work with a General Electric building specialist. *Apparatus Dept., General Electric, Schenectady, N. Y.*

Electric Equipment for Commercial Building

GENERAL ELECTRIC

665-106

(*Continued from page 166*)

the meeting will be held at the Buena Vista Hotel, Biloxi, May 19–21.

Speakers and discussion leaders will include Frank Lloyd Wright; Surgeon General Leonard A. Scheele of the U. S. Public Health Service; Dr. Thomas Parran, former Surgeon General and now Dean of the University of Pittsburgh's School of Public Health; Dr. Vane M. Hoge, Chief, Division of Hospital Facilities, USPHS; and Kay Kyser, health and hospital leader of North Carolina. The Conference will feature seminars on all phases of hospital work.

COMPETITIONS ANNOUNCED

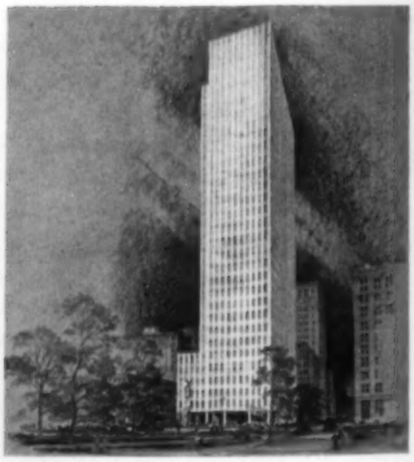
Junior Chamber of Commerce

Prizes totaling $7000 are offered in a nation-wide competition for the design of the National Headquarters Building for the United States Junior Chamber of Commerce, to be located in Tulsa, Okla. The building will be dedicated as a memorial to the Junior Chamber of Commerce members who gave their lives in World War II.

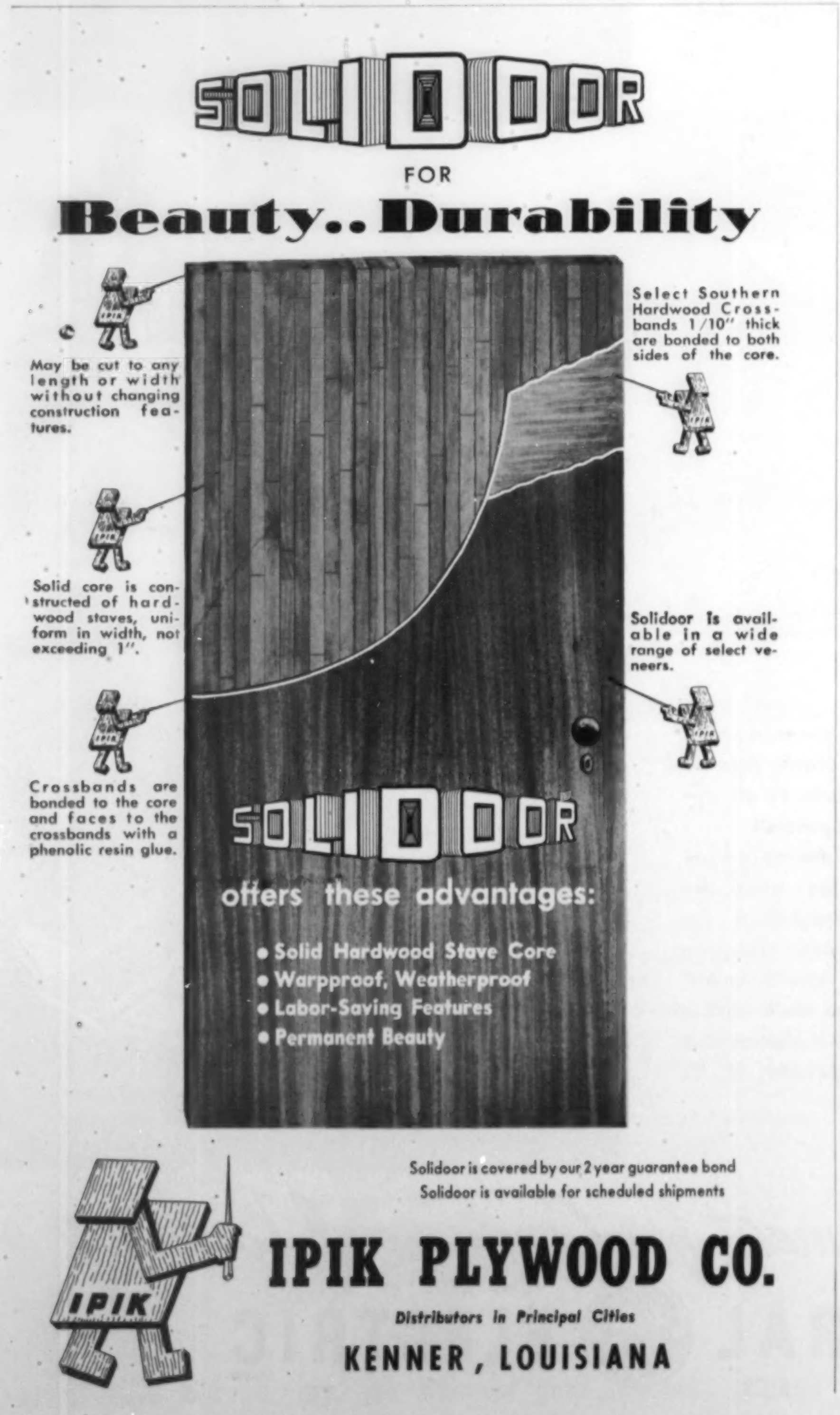
Sponsored by Servel, Inc., of Evansville, Ind., and General Portland Cement Co., of Chicago, the competition will be conducted by *Progressive Architecture*. First prize will be the commission for designing the building; 33 additional prizes will be cash awards to the total of $7000.

(*Continued on page 170*)

Fitting rooms like stars' dressing rooms and novel chairs form a light touch at Lord & Taylor's new store in Millburn, N. J. Store is reminiscent throughout of the Westchester Lord & Taylor's presented in ARCHITECTURAL RECORD, *April, 1948*



New building for the Aluminum Company of America, to be erected in downtown Pittsburgh next year. Exterior wall surfaces will be a series of aluminum panels hung from structural steel frame and backed with 4 in. of formed diacrete. Harrison & Abramovitz, Architects; Altenhof & Bown and Mitchell & Ritchey, Associates



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Select Southern Hardwood Crossbands 1/10" thick are bonded to both sides of the core.

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SOLIDOOR offers these advantages:

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- Labor-Saving Features
- Permanent Beauty

Solidoor is covered by our 2 year guarantee bond
Solidoor is available for scheduled shipments

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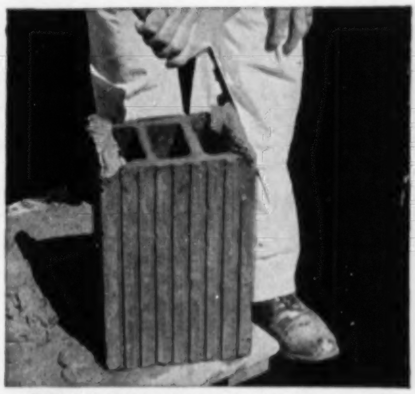
Distributors in Principal Cities
KENNER, LOUISIANA

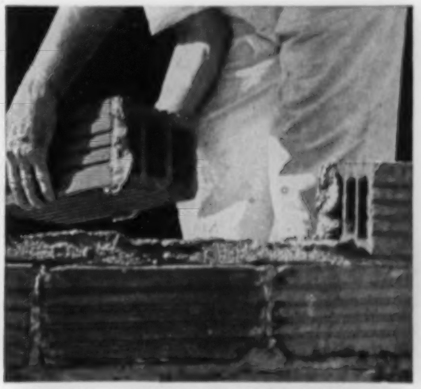
GET BETTER TILE AND BLOCK-WORK with BRIXMENT!

Tile or block-work offers very little protection against the penetration of water, unless both inside and outside head joints are completely filled with mortar.

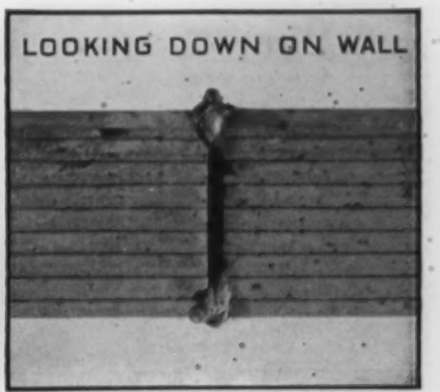
In laying clay tile, or concrete or cinder block, even when they are used only for back-up work, especial care should be taken to secure full head joints on both the inside and the outside edges of the unit. Either of the following two methods may be used:



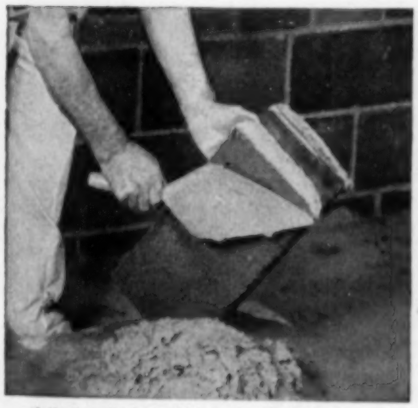
Method 1. Full head joints should be thrown onto both edges of the tile to be placed, or—



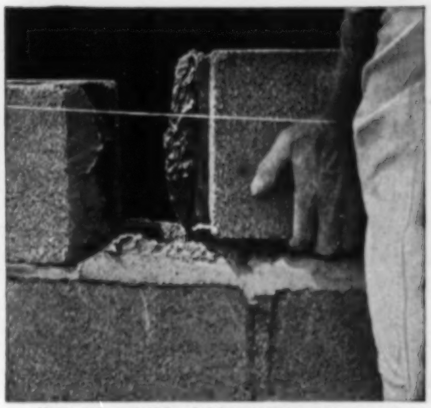
Method 2. A full head joint should be thrown onto one edge of the tile in place and also onto the opposite edge of the tile to be placed.



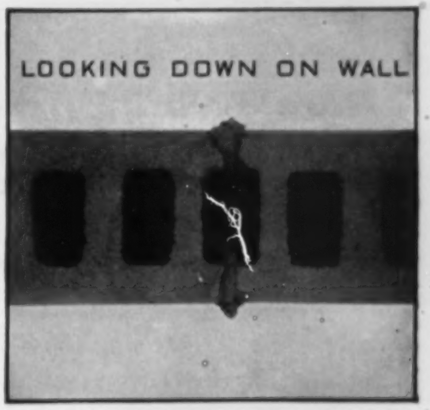
Enough mortar should be used to cause excess mortar to ooze out of the joints on both sides of the tile.



Method 1. Full head joints should be thrown onto both edges of the block to be placed, or—



Method 2. A full head joint should be thrown onto one edge of the block already in place and also onto the opposite edge of the block to be placed.



Enough mortar should be used to cause excess mortar to ooze out of the joints on both sides of the block.

One of the reasons bricklayers prefer Brixment mortar is the way it *sticks* to the tile or block, as shown above. It "stays put." The bricklayer does not have to stoop to the board for more mortar. *You* get a stronger, more water-resistant wall. ● Brixment mortar is easier to work, saves time, effort, and money. In addition, it has higher water-retaining capacity, greater bonding quality, is more durable. It is this *combination* of advantages that has made Brixment the largest-selling masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

THE RECORD REPORTS

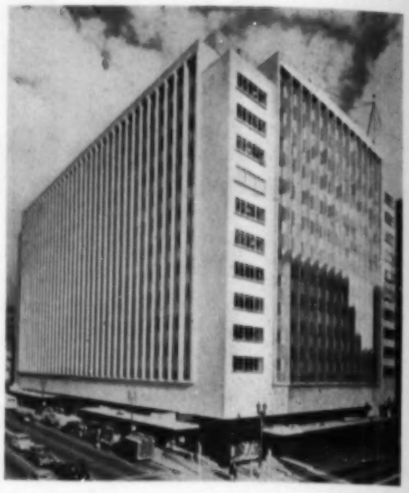
(Continued from page 168)

The competition opened March 1st, and closes at midnight, May 16, 1949. Full details may be secured from *Progressive Architecture*, 330 W. 42nd St., New York 18, N. Y.

Spanish Housing

The Instituto Tecnico de la Construccion of Spain has announced an international competition for the design of housing for 50,000 Spanish families. The houses are to be designed for erection in groups of 500 or more in urban districts, and must be suitable without alteration for various climatic conditions. Full plans for erection, including manufacture of necessary materials, must be submitted.

Further information may be obtained until July 1, 1949, from the Institute at Ruiz de Alarcon 25, Madrid, Spain. The competition closes November 15th.



Art Streib Studio Photo

New home office building of the General Petroleum Corp., Los Angeles, designed by Wurdeman and Becket, Architects

WORK SHEETS AVAILABLE

The American Institute of Architects recently has published a collection of "Specification Work Sheets" written by Ben H. Dyer, A.I.A., as a time- and money-saver for the private practitioner. Prepared in pad form, the work sheets make it possible to delay writing specifications until working drawings are about completed. Copies may be obtained from Institute headquarters, The Octagon, 1741 New York Ave., N.W., Washington 6, D. C., for $5.00 the set.

AT THE COLLEGES

Faculty Appointments

Two recent appointments to the faculty of the School of Architecture at Columbia University are Henry S. Churchill as an Associate in Planning, and Maxwell H. Tretter as Lecturer in Housing.

Mr. Churchill, a member of the firm of Churchill-Fulmer Associates, is vice chairman of the Committee on Urban Planning of the A.I.A. Mr. Tretter is the former executive director and counsel of the New York City Housing Authority.

New Department

The University of Utah recently has organized a new department of architecture, the curriculum of which is to center around an introduction to the principles of architecture and problems peculiar to architects in Utah and its neighboring states. According to Roger Bailey, department head, the chief aim is to "correlate architecture with the excellent climate of the intermountain region and to make use of the beautiful

(Continued on page 172)

Zoology Laboratory, Municipal University, Omaha, Nebr.

Here's what "Kewaunee Equipped" Means to Architects . . .

The list of high school and elementary school laboratories that are "Kewaunee Equipped" reads like a Blue Book of the Educational Field.

Leading Architects know that with Kewaunee Engineers on the job at every stage, from planning to final inspection, no detail is overlooked.

Every completed Kewaunee job provides top efficiency with true economy and reflects credit on the architect who specifies "Kewaunee Equipment."

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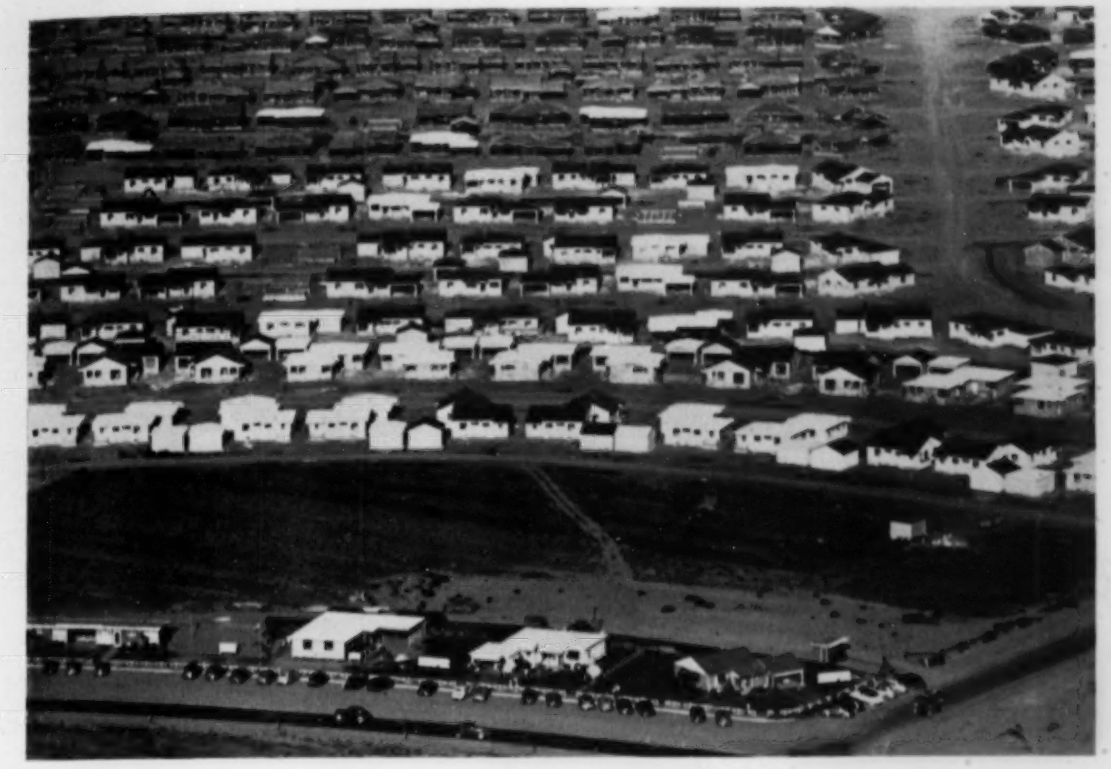
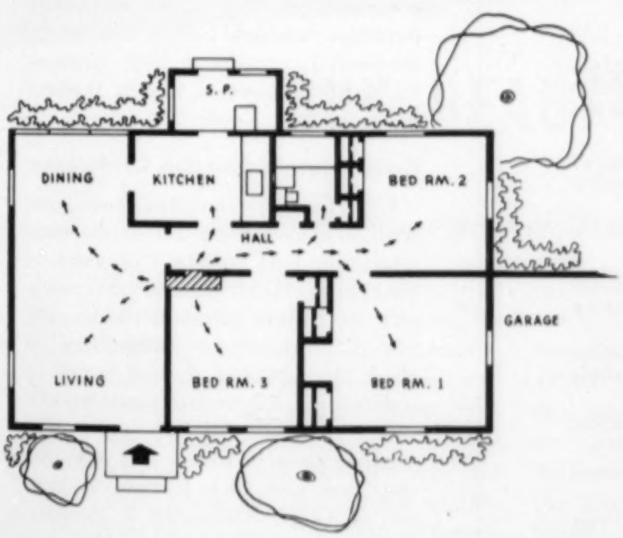


WORLD'S LARGEST RESIDENTIAL DEVELOPMENT USES NEW TYPE HEATING

When Fritz Burns, President of Kaiser Homes, developed his first post-war home, the Royal Jet-Flow was just coming off the production lines. It was tested and found to give heating performance equaled only by forced air units costing three times as much. Since that time over 6000 Jet-Flow heating units have been installed in Kaiser Homes alone.

With its fine performance, its minimum upkeep, and high owner satisfaction it was natural that the new model Jet-Flow was selected for the 2000 1949 Model Kaiser Homes (illustrated above) now being built in Panorama City, California.



The gas-fired unit is placed near the center of the floor plan, and distributes heat in three directions from registers located 6" below ceiling level. Through the use of the jet principle heat is circulated at a velocity of 300 feet per minute to all parts of the house. Test showed a room-to-room temperature differential of less than 2°.

Walter Wurdeman and Welton Becket, Collaborating Architects

Royal Heaters, Inc., Manufacturer
1024 Westminster Ave., Alhambra, Calif.

We suggest you write for literature and specifications. Royal Jet-Flow is distributed nationally.

(*Continued from page 170*)

backdrop of the mountains." The new department is the only one of its kind between Denver and the West Coast.

New Chapel for B. U.

Ground was broken in February for a new chapel at Boston University, the fifth building on the University's new campus overlooking the Charles River. The chapel will occupy the center of the campus, flanked by the College of Liberal Arts and the School of Theology, and backed by the University Tower, which will house the administrative offices. Like other new buildings, it will be perpendicular Gothic in style and constructed of Indiana limestone. Cram and Ferguson are the architects.

Measuring 100 by 50 ft., the building will have a seating capacity of 500 on the nave floor. A meditation chapel, seminar and other rooms will occupy the lower levels. Stained glass windows designed and built by Charles J. Connick for the University's Robinson Memorial Chapel in the present School of Theology building on Beacon Hill will be incorporated in the new chapel. Cost of the building is estimated at $900,000.

Fellowship Available

The College of Architecture and Design, University of Michigan, announces that the George G. Booth Traveling Fellowship in Architecture will be offered again this year. There will be no formal competition in design, but upon request applicants will be issued an application form to be completed and returned not later than May 15, 1949. This competition is open to all graduates of the school who have not reached their thirtieth birthday on the date mentioned above. Prospective candidates should write at once to the office of the College of Architecture and Design, 207 Architecture Building, Ann Arbor, Michigan.

Architecture in Mexico

The University of Houston has announced a summer course in architecture to be held at its Mexican Summer Center from June 6 to July 11. The course is open to both graduate and undergraduate students, and will include class lectures (in English) at the University of Mexico, and field trips in and around Mexico City. Director is David Red, Instructor in Architecture at the University of Houston.

Applications for registration must be completed by May 15. For further information address Joseph S. Werlin, Director, International Study Centers, University of Houston, 3801 St. Bernard St., Houston 4, Texas.

Architectural Education Conference

Eight prominent architects were guest speakers at a conference on Architectural Education held at the University of Illinois Feb. 21–23. Planned particularly with the current curriculum of the Illinois Department of Architecture in mind, the meetings stressed trends in architecture and architectural practise and education. Speakers were Max Abramovitz of Harrison and Abramovitz, New York City; Richard M. Bennett of Loebl, Schlossman & Bennett, Chicago; Kenneth Johnstone, chairman of the committee on education, A.I.A.; George H. Miels, president of Albert Kahn, Inc., Detroit; John W. Root of Holabird, Root and Burgee, Chicago; Paul Schweikher of Schweikher and

(*Continued on page 174*)

The ARCHITECT 15"

YOU DEMANDED THIS MASSIVE SHINGLE

For a long time architects and builders have been demanding an asphalt shingle with these features: Greater thickness, greater rigidity, greater protection through increased headlap and a longer life span.

HERE IT IS..."The Architect", a new shingle designed especially by Bird & Son to meet the most exacting specifications:

- *Thick massive butts,* approximating slate or wood shingles in caliper . . . heavy shadowlines.
- *Weight 290 pounds per square*... the perfect balance of greater saturation and heavier coating of life-giving asphalt.
- *Triple coverage, 5" headlap* ... Major factors in long-lived protection against standing snow and driving winds and rains.
- *Surfaced with larger mineral granules*... outstanding appearance, better adhesion, longer surface protection.
- *Greater rigidity* because of the heavier felt base, more asphalt and heavy, coarse mineral granules.
- Cost of "The Architect" *is in the asphalt shingle price range* . . . a prime selling feature for this rich, luxurious shingle.

The Architect shingle is presently available only in areas served by our East Walpole plant. Write Bird & Son, inc., Dept. AR-1, 1472 West 76th St., Chicago 20, Ill. for information about our #27 Master-Bilt Shingle with similar quality features.

BIRD & SON inc. Established 1795

BUY BEAUTY *by the foot!*

Specify Martin-Parry METLWAL for Distinctive Partitions and Paneling

YES, planning beautifully distinctive interiors is a lot simpler when you call for smart, modern METLWAL! Factory-finished in rich, natural woodgrain reproductions or baked enamel finishes . . . METLWAL will not chip, crack or craze; does not reflect harsh, metallic light; is Bonderized against rust and corrosion.

METLWAL is easy to erect, too! Erection crews merely . . . (1) attach floor and ceiling channels; (2) insert studs in channels; (3) snap on panels; (4) slip on base. All panels and parts may be cut on the job with a saw. One man can handle a full-size panel. *Only a few standard parts from warehouse stock.* No need for plaster in new construction and for filler boards of other materials at ends or above cornice level. Write today for your copy of latest catalog A-4. See how METLWAL can help you plan beautiful interiors! Address: Martin-Parry Corp., Toledo 1, Ohio.

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MOVABLE PARTITIONS

69 Years of Service

ENGINEERING AND ERECTING SERVICE AND WAREHOUSE STOCKS FROM COAST-TO-COAST

THE RECORD REPORTS *(Continued from page 172)*

Elting, Roselle; and Walter A. Taylor, director of education and research of A.I.A.

OFFICE NOTES

Offices Opened, Reopened

Milton Abrams, A.I.A., has opened new offices at 235 Lincoln Rd., Miami Beach, Fla.

Sid Bersudsky and Associates, Industrial Designers, have opened new offices at 539 King St. West, Toronto, Canada.

Alex Danin, Architect, has announced the opening of an office for the practice of architecture at 1837 Victory Blvd., Staten Island 14, N. Y.

Ralph W. Hawks, Consulting Engineer, has opened an office offering to architects a complete structural engineering consulting service covering all types of building construction. His address is 549 Eighth Ave., Troy, N. Y.

L. Brooks Martin, Architect, has opened offices at 201 Varisco Bldg., Bryan, Texas.

Ruth L. Strauss, Interior Designer and Color Consultant, has established new offices at 509 Madison Ave., New York City.

Max J. Wolfson, Architect, has opened his own office at 3845 Alta Vista Terrace, Chicago 13, Ill.

New Addresses

The following new addresses have been announced:

Allied Engineering Corp., 71 Proctor St., Roxbury 19, Mass.

Burgess & Niple, Civil and Sanitary Engineers, 584 E. Broad St., Columbus 15, Ohio.

Gordon Drake, Designer, P.O. Box 2905, Carmel, Calif.

C. Dale Dykema, A.I.A., 15056 Gulf Blvd., Maderia Beach, St. Petersburg, Fla.

Electrical Design Co., Inc., Engineers, 45 Branford Pl., Newark 2, N. J.

Greenwald and Mirot, Architects (Leslie J. Greenwald, A.I.A., and Jules G. Mirot, A.I.A.), 506 S. Wabash Ave., Chicago 5, Ill.

Moore & Hutchins, Architects (John C. B. Moore, A.I.A., and Robert S. Hutchins, A.I.A.), 215 E. 37th St., New York 16, N. Y.

Paul Thiry, Architect, 800 Columbia St., Seattle 4, Wash.

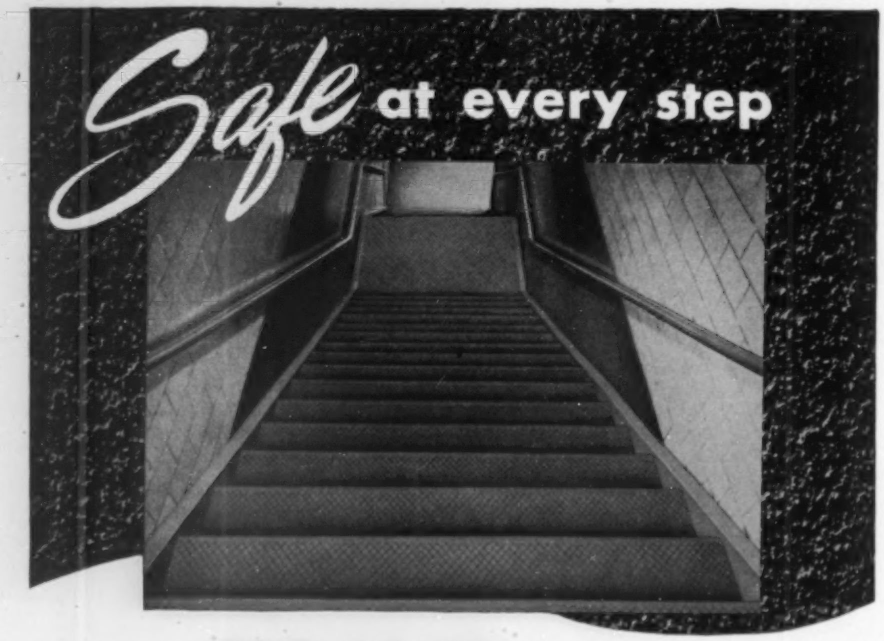
New Firms, Firm Changes

The name of the Brevetti Construction Company of New York City and Lynbrook, L. I., has been changed to Brevetti-Walsh, Inc., General Contractors, with offices at 101 Park Ave., New York City, and 128 Garfield Pl., Lynbrook, L. I., N. Y. Walter V. Walsh, until recently a member of John H. Eisele Company, is president and Joseph Brevetti is secretary and treasurer.

Lester Geis, Architect and Designer, has been appointed to the New York office staff of Garden City Plating & Mfg. Co. of Chicago.

Thomas F. Holifield, A.I.A., and associates, Millard P. Buck and Robert D. Caldwell, have established a new office at 1806 Hillcrest Dr., Bartlesville, Okla. Associated with them are Harold C. Potter and Otis L. Splinter, formerly with the University of Nebraska, and Dwight B. Mapes, Jr., formerly with the University of Oklahoma. The firm's mailing address is Box #490, Bartlesville, Okla.

(Continued on page 176)



WITH **FERALUN** SAFETY TREADS

Workmen at the Curtiss Wright Plant, Propeller Division, Caldwell, N. J., go up and down these stairs . . . safe at every step.

Their shoe soles come to grips with non-slip Feralun Safety Stair Treads, cast iron, with wear-resistant abrasive embedded right in the walking surface.

Heavy traffic day in, day out — — but Feralun Safety Treads, built to take hard use, stay non-slip . . . last and last.

And that means low maintenance . . . and high safety.

4 TYPES:

Cast iron base . . . . . FERALUN
Bronze base . . . . BRONZALUN
Aluminum base . . . ALUMALUN
Nickel bronze base . . NICALUN

3 SURFACE STYLES:

hatched . . . plain . . . fluted

Use coupon below to get our free, illustrated catalog. Also consult Sweet's File, Architectural, 13 a-8.

AMERICAN ABRASIVE METALS CO. (AR-4-49)
460 Coit Street Irvington, N. J.

☐ Please send me your catalog on non-slip stair treads, floor plates, thresholds, elevator sills, and safety tile.

☐ Please have one of your safety engineers contact me.

Name...Title...
Company...
Street...
City...State...

New G-E Wiring System Offers Unlimited Possibilities In Modern Lighting Control

Multiple Switching from Many Locations Available at Low Installation Cost With G-E Remote Control

Switch your garage lights ON or OFF from any room in your home—in hospitals, give every patient a light switch next to his bed—in industrial plants and commercial buildings, let every night watchman have a centralized bank of switches for all lights in his area. These are just a few of the many possibilities that can be brought about by the new remote control system, recently announced by the General Electric Company.

Easy to Install

Using existing methods for wiring all power circuits, the General Electric remote control system requires no new materials or techniques except in the switching circuit itself. In this circuit a small, low-voltage relay does the actual switching. Control of this relay can be placed practically anywhere in a building, simply by installing lightweight wires from the relay to conveniently located wall switches, specially developed for this purpose. "Easy as wiring a doorbell," is the way one observer described this circuit.

Because this new system cuts the cost of materials used in multi-switch applications, because it makes possible a large number of controls on any individual circuit, General Electric remote control clears the way for wide use of multi-switch control in structures of all types.

Keeps Costs Down

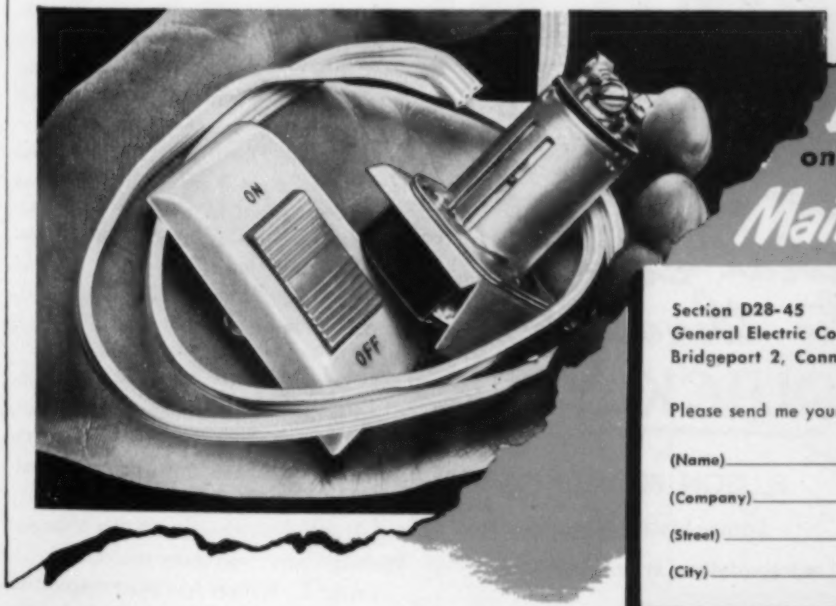
In residential wiring, this new system means real "dream-home" electrical control even in residences where costs must be cut to the bone. Simple applications include the example of garage lights given above—also attic fan and cellar light controls in various parts of the house. In the completely modern house, all lights and outlets can be controlled from various locations.

In dormitories, institutions, and commercial buildings, General Electric remote control can provide an effective centralized system for lighting control. Wherever "lights-out" regulations are in effect, a master panel of remote control switches can be used to enforce these regulations for an entire building or a whole floor. In commercial structures or plants, a similar system can be used to turn out lights left on after hours. Commercial and industrial operations can profit by the over-all multi-switch control offered by this system.

Offers New Ideas

To everyone concerned with building and remodeling, this new system offers a completely new range of ideas on flexibility in the use of electricity. To the architect, it means a new era in electrical convenience in structures of all sizes and types. To the buyer and the investor, it means increased workability and extra value, now and in the years to come. To the electrical contractor, General Electric remote control offers a vast, new field for his services.

To answer questions on the applications of General Electric remote control—to explain the procedure and the materials required—the General Electric Company has prepared an informative booklet on the subject. This booklet is a valuable guide for everyone interested in this new system. To get your copy early, simply fill out the coupon and mail it today.



Here are the essential components of the new General Electric remote control system: the switch, the small transformer (not shown), the relay, and the lightweight No. 18 wire. All accessories necessary for the system are manufactured by General Electric and sold through your General Electric Construction Materials distributor.

Learn the Facts
on this important new system
Mail Coupon Now

Section D28-45
General Electric Company
Bridgeport 2, Connecticut

Please send me your new booklet on General Electric remote control.

(Name)__________ (Title)__________

(Company)__________ __________

(Street)__________

(City)__________ (Zone)_____ (State)_____

GENERAL ELECTRIC

THE RECORD REPORTS

(Continued from page 174)

Kinsley McWhorter and Associates, Consulting Engineers, and James Berkeley Robinson, Architect, have announced the formation of the firm of McWhorter, Robinson and Moody, Engineers and Architects, for the general practice of engineering and architecture. Address: Witz Bldg., Staunton, Va.

Singleton P. Moorehead, director of the architectural department of Colonial Williamsburg, has been named advisory consultant to the Department of Architecture at Williamsburg. Mario E. Campioli, formerly production manager of the New York architectural firm of Eggers & Higgins, will succeed Mr. Moorehead as director of the architectural department.

Robert H. Orr, F.A.I.A., W. T. Strange, Jr., A.I.A., and Robert R. Inslee, A.I.A., have announced the formation of a new partnership under the firm name of Orr, Strange & Inslee, Architects, with offices at 3142 Wilshire Blvd., Los Angeles 5, Calif.

Thorvald Pederson, Architect, has announced the forming of a partnership with J. Murray Hueber, Architect, under the firm name of Pederson & Hueber, Architects, Successor to Paul Hueber. Address: 200 Syracuse-Kemper Bldg., Syracuse, N. Y.

Mel. J. Stevenson has announced the organization of the firm of Mel. J. Stevenson and Associates, Consulting Engineers, with offices at 69 W. Washington, Chicago 2, Ill. Participating associates are: E. T. Bryant, Morry Pinas, Herman C. Cheslow, E. N. Maisel, Kenneth R. Webb, Richard D. Cronin, Dale R. Swaidner, Frank E. March, Charles Seynemeier, Henry Hoffnung and M. Stuart Stevenson.

ELECTIONS, APPOINTMENTS

William Eipel, member of the structural engineering firm of Tuck & Eipel, has been elected president of the New York Association of Consulting Engineers. Elected to serve with him were: John F. Hennessy, of Syska & Hennessy, vice president; Harry Bond, Consulting Engineer, treasurer; W. Donald Christie, Consulting Engineer, Secretary.

Hugh M. Hughes, president of the H. M. Hughes Co., Inc., General Contractors, has been elected president of the Building Trades Employers' Association of New York City.

Ludwig Mies van der Rohe, head of the department of architecture at Illinois Institute of Technology, has been elected to honorary corresponding membership in the Royal Institute of British Architects.

Ben Nash, Industrial Designer and lecturer at New York University, was elected president of the American Designers' Institute at the Institute's recent annual meeting. Other officers elected were: Henry Glass, vice president; Dan Jensen, treasurer; Ann Franke, secretary.

J. P. Stiger of the Johns-Manville Corp. is the new president of the Asphalt Tile Institute. Elected to serve with him: Harry A. Hachmeister, president of Hachmeister, Inc., vice president; C. J. Christoverson, of the Sloane-Blabon Corp., secretary-treasurer.

Bruce L. Wilson has been appointed Chief of the Engineering Mechanics Section of the National Bureau of Standards. He has been a member of the Bureau staff since 1929, working in the Engineering Mechanics Laboratory.

Do YOU work hard?

Balanced Doors *Don't!*

Easy operation, in spite of adverse wind or air suction conditions, is CERTAIN *with Ellison*, the balanced door

AND – *Ellison is the door that lets traffic through* QUICKLY

Ellison

ELLISON BRONZE CO.
Jamestown, New York
representatives in principal cities

the BALANCED DOOR

CONNOR

Manufactured and Graded Under **M.F.M.A.** Specifications

FOREST PRODUCTS SINCE 1872

see our CATALOG in SWEET'S FILE ARCHITECTURAL

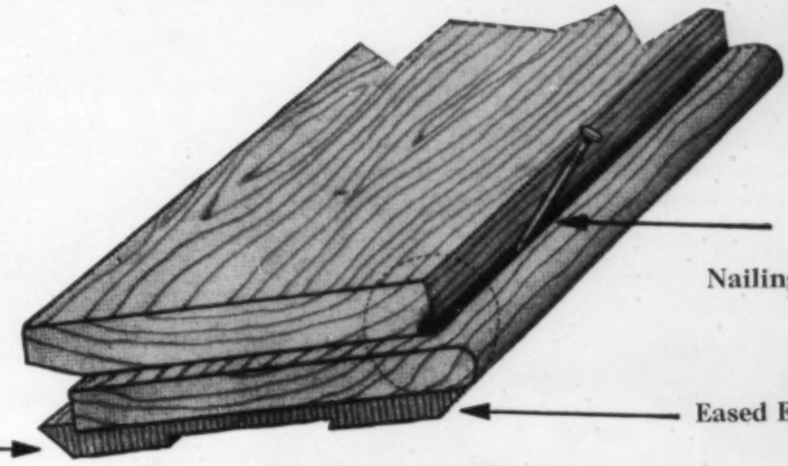
"LAYTITE"

Maple and Birch

FLOORING

The World's Finest

— Bar None



Write for illustrated 75th Anniversary Booklet

CONNOR LUMBER AND LAND COMPANY

Mixed Cars—Northern Hardwoods, Pine and Hemlock and Flooring

PHONE No. 3 **MARSHFIELD, WIS.** **P. O. BOX 112-R**

Mills: Laona, Wisconsin and Connorville, Michigan

Behind The Mills — The Connor Timber Stands

Safe footing in every step...

TUFF-TRED

SAFETY STAIR NOSING

Building for permanence calls for TUFF-TRED Safety Stair Nosings on every step . . . nothing will do so much for the appearance and safety of stairs. For use on any type stair whether new or old . . . in office or industrial buildings, in schools or in homes. Wherever installed TUFF-TREDS prove extremely long wearing . . . for they're durably constructed of polished extruded aluminum with anti-slip, semi-resilient abrasive filler. Practical architects and contractors consistently specify TUFF-TREDS because of their permanent beauty, safety and economy.

You are invited to write for complete details

GOODLOE E. MOORE, INCORPORATED • **DANVILLE 6, ILLINOIS**

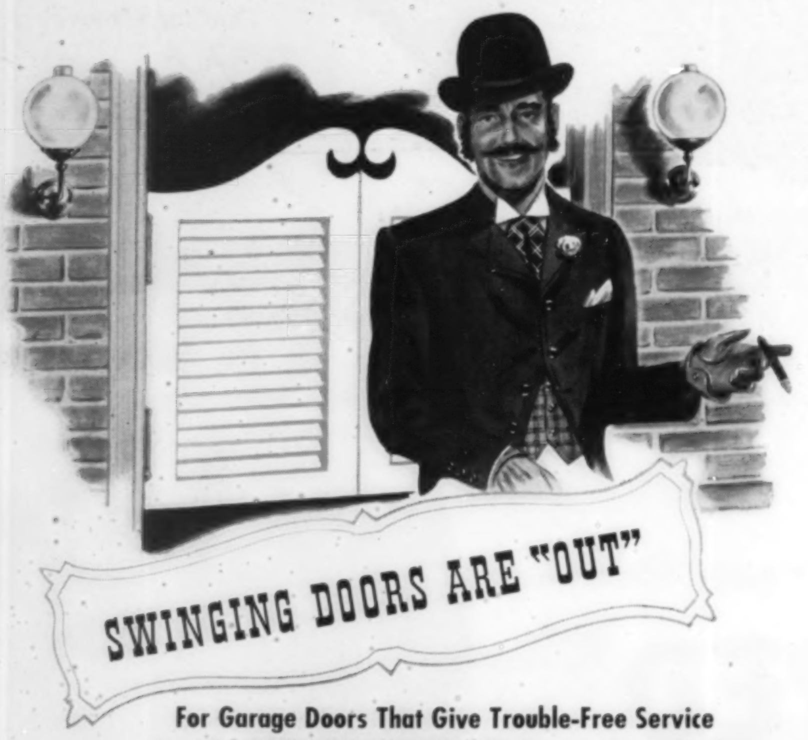
(*Continued from page 147*)

FLOOR ENAMEL

A new floor enamel with a base of Vinylite resins for all wood, concrete and metal floors is said to assure successful coating of floor areas that were formerly difficult to paint satisfactorily.

The enamel, which is applied by brush or spray, is reported to be unaffected by water, greases, oils, brine, alcohols, petroleum solvents, soaps, all alkalies and most acids. The manufacturer claims it will withstand at least twice as much dry abrasion and ten times as much scrubbing with alkali solutions as floor enamels having any other base.

Available in black, white, and six colors, the enamel gives covering surface of approximately 500 sq. ft. per gallon, depending on porosity of the surface. Benjamin Foster Co., 4635 W. Girard Ave., Philadelphia 81, Pa.



For Garage Doors That Give Trouble-Free Service
. . . Specify RICHARDS-WILCOX 999 Garage Door Hardware

For many years, leading architects and builders have agreed that Richards-Wilcox Door Hardware is the world's finest. Now, with the new line of R-W 999 Garage Door Hardware, out-dated, troublesome swinging garage doors can be converted quickly and easily into the modern, overhead type.

Overhead garage doors hung with R-W 999 Hardware are weathertight, the easiest to operate, and they "stay put." And R-W 999 Hardware comes *complete*—in one convenient kit—with everything needed for installation and operation.

For further information, simply call or write the nearest Richards-Wilcox office. Ask for free folder with complete facts about R-W 999 Hardware—your surest cure for garage door grief.

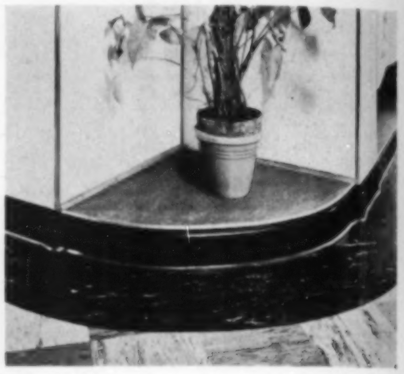
1880 RICHARDS WILCOX R-W AURORA 1949
Reg. U. S. Pat. Off.
OVER 69 YEARS

Richards-Wilcox Mfg. Co.
"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A.
Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C. Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Los Angeles San Francisco Denver Seattle Detroit Atlanta Pittsburgh

COVING FOR HARD FLOORS

A Vinyl plastic-set-on-base coving in 100-ft. lengths for all types of hard surface flooring is now in production.

The new coving, which is 4 in. high, can be fastened to any type of wall with ordinary floor covering adhesives.



Plastic coving is fastened to the walls with ordinary floor covering adhesives

Pre-formed corners and dirt-catching seams are reported eliminated by the coving. Fremont Rubber Co., 115 McPherson Highway, Fremont, Ohio.

CHILLED WATER SUPPLY

The *Filter-Cooler*, which is reported to offer unique advantages to hospitals and other institutions which require a large supply of chilled water, delivers water as low as 34 F.

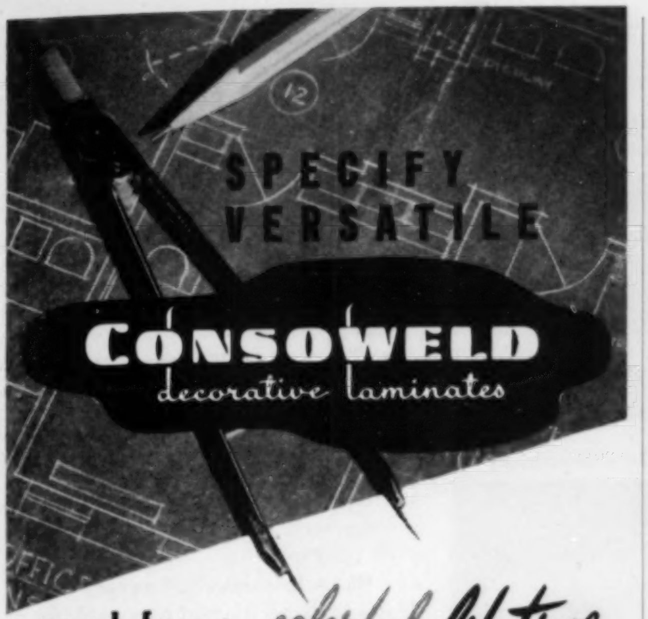
Rust and dirt and all tastes and odors are claimed eliminated by an integrated Filter-Dechlorinator. A Super-Storage feature is designed to accumulate chilled water reserve during periods of intermittent use. Capacity permits service at the cooler and at additional fountains or filling stations on other floors.

The unit is available in hand-polished stainless steel or with Duco finish in pastel shades to match any color scheme, and has a reinforced angle-iron frame. It also comes in a stainless steel model suitable for use in dining-rooms and service pantries, with faucets, bubblers, fillers, or a combination of all three at one or more sides and with racks for glasses mounted at top or sides. Filtrine Manufacturing Co., 53 Lexington Ave., Brooklyn 5, N. Y.

LIGHTING FOR ATOMIC ENERGY COMMISSION OFFICES

New offices of the New York Regional Office of the Atomic Energy Commission feature a novel wiring system, used in the adaption of an ordinary garage type space having concrete floors, ceilings and

(*Continued on page 180*)



good for a colorful lifetime

KITCHEN

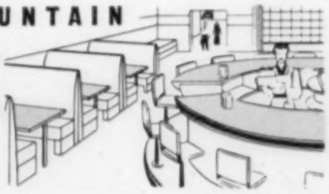
Practical, permanent CONSOWELD resists cuts, scratches, heat, alkalis and acids.

BATH

Beautiful, moisture-proof CONSOWELD wipes sparkling clean with a damp cloth.

BAR or FOUNTAIN

Tough CONSOWELD stays better-looking longer — never needs painting or resurfacing.



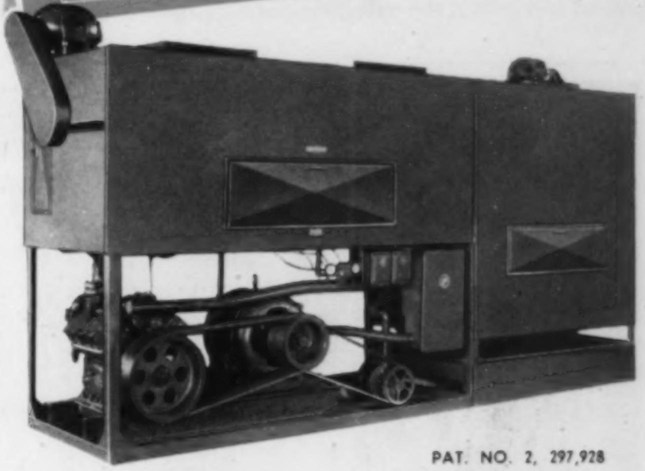
COMMERCIAL INSTALLATIONS

Versatile CONSOWELD, available in sizes up to 8' x 16', offers endless imaginative adaptations.

Everyday, more and more practical, attractive CONSOWELD is being used in residential, commercial and industrial construction. For convenient reference to colors, patterns and ordering data see Sweets File 13i/2. Complete samples and helpful installation data available from your CONSOWELD Distributor, or write direct to:

**CONSOWELD PLASTICS DIVISION,
CONSOLIDATED WATER POWER & PAPER CO.
WISCONSIN RAPIDS 15, WISCONSIN**

When "specs" demand your best . . .
CHOOSE GOVERNAIR
* completely packaged
AIR CONDITIONERS



PAT. NO. 2, 297,928

A Complete Unit for a Complete job

You're always *sure* you're getting the very best in efficient, economical packaged air conditioning when you specify Governair—the original patented design!

This complete unit is easy to install—requires only simple electrical, water and duct connections. Built-in Evaporative Condenser keeps water usage down to a minimum. Governair engineering assures correct coordination and balance of all functions. Generously proportioned heat transfer surfaces provide maximum performance and economy.

Choose Governair completely packaged air conditioners and you'll *always* do your best!

*Originators of Completely Packaged Air Conditioners

GOVERNAIR

513 N. Blackwelder • Oklahoma City, Okla.

ARCHITECTS • ENGINEERS • CONTRACTORS

Would you like to know how Air Conditioning jobs can be installed for from $100.00 to $400.00 per ton less?

Write Dept. K

GOVERNAIR CORPORATION
513 N. Blackwelder • Oklahoma City, Okla.

(Continued from page 178)

columns into attractive office space.

The ceiling was covered with acoustical tile, and the wiring system was said to result in practically concealed wiring without involving the labor and expense of cutting chases for conduit in the existing concrete ceiling. *Wiremold* raceways, the same thickness as the ceiling tile, were mounted to the concrete ceiling and painted to match the tile so that in general appearance, the ceiling shows no outlines that might be disturbing.

Shallow fluorescent fixtures were desired for the general office areas; the type chosen were the *Linolite Series 11* which are only 3 in. deep. The fixtures were surface-mounted in 8 ft. sections to the ceiling tile. Due to restrictions and limitations caused by existing sprinkler lines, ducts, column spacing, etc., the fixtures were mounted in rows, 12½ ft. on centers; although ceiling is 11 ft. high, fairly good uniformity was reported maintained. Average illumination provided was said to be 35 foot-candles. Louvers provide 30° crosswise and 45° lengthwise shielding.

In other offices where hung ceilings were installed, recessed troffers (louvered shielded) were installed to produce an average of 50 foot-candles.

A specially designed recessed troffer, 8 ft. long and 6 in. wide, having two 40 watt lamps in tandem, was used to light hallways. The Frink Corp., Bridge Island Plaza, Long Island City 1, N. Y.

PLASTIC PARTITION

Lightweight, translucent plastic blocks comprise a new demountable partition for offices.

Bloxolite is described as easy to erect and to dismantle and reassemble for re-use. The blocks, which weigh less than a pound each, are made of a plastic material called Styron, which is designed to resist moisture, cracking, warping, expansion and contraction.

Interlocking basswood strips are used to assemble the blocks, which measure 8 in. by 8 in. by 2½ in. Armstrong Cork Canada Ltd., 6911 Decarie Blvd., Montreal, P. Q.

Translucent plastic blocks are now made in Canada for demountable partitions

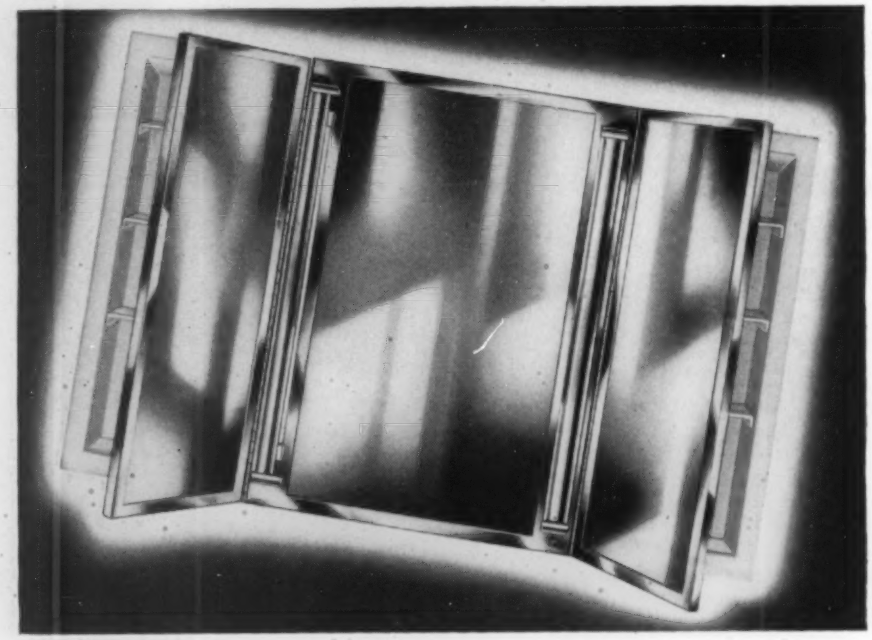
ALL-ALUMINUM PRECIPITRON

An all-aluminum model of the industrial *Precipitron* for air purification is reported to have a 10 per cent increase in air handling capacity.

The increase is achieved by an extension in the direction of air flow. Three inches additional length in each plate give the new unit 17 per cent more dirt-trapping area.

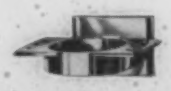
The new Precipitron comes in two sizes: 36 in. wide and 24 in. wide, with respective air cleaning capacities of 1000 and 667 cu. ft. per minute. Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa.

(Continued on page 182)

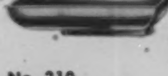


Your own ideas packaged & delivered

Above: No. 7004 Lumiline or Fluorescent Light Cabinet with Side Cabinets.



No. 215 Tumbler and Tooth Brush Holder



No. 210 Soap Holder

LONG YEARS of cooperation with architects and builders have developed Parker's ability to "package" many of their ideas into high quality, reasonable cost bathroom fixtures. The complete Parker Line of bathroom cabinets and accessories meets a strict standard of style, utility, materials and workmanship for any requirement. It will be to *your* advantage to see the complete line in Sweet's, or send for the new Parker Catalog: The Charles Parker Company, Meriden, Conn.

PARKER

BATHROOM CABINETS AND ACCESSORIES

GENERAL PORTLAND CEMENT COMPANY

manufacturers of

Trinity White PORTLAND CEMENT

is pleased to announce its co-sponsorship

of a nation-wide

ARCHITECTURAL COMPETITION

Conducted by

PROGRESSIVE ARCHITECTURE Magazine for the design of

NATIONAL HEADQUARTERS BUILDING for

UNITED STATES JUNIOR CHAMBER OF COMMERCE

which will be dedicated as a living memorial to those of its members who gave their lives in World War II

We hope that architects everywhere will take active interest in this competition. The full program was carried in the March issue of Progressive Architecture. A copy of the program may be obtained from that magazine or this sponsor.

Also available are two pieces of literature describing specific uses of Trinity White Portland Cement. These are:—

1. Architectural details, data and photographs showing the use of Architectural Concrete Units made with Trinity White Portland Cement for the Prudential Building, Los Angeles, California.
2. Construction details for uses of terrazzo made with Trinity White Portland Cement for floors, shower stalls, stairways, wainscots, etc.

Address: General Portland
Cement Company, 111 W.
Monroe St., Chicago 3.

Trinity White

PORTLAND CEMENT

(*Continued from page 180*)

PAPER EDGER

Protective edges of *Scotch* tape can be applied mechanically to blueprints, drawings, posters, and other paper materials with the *Scotch Edger* which uses either ½ or ⅜ in. tape. The edger also applies tape to reinforce paper folds and to bind single pages together in the form of a folder. An automatic self-adjustment mechanism accommodates various paper thicknesses up to 1/16 in.

White Scotch Edging Tape No. 750 has a special adhesive said to prevent oozing at the edges, thus permitting taped sheets to be filed without sticking. Minnesota Mining and Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn.

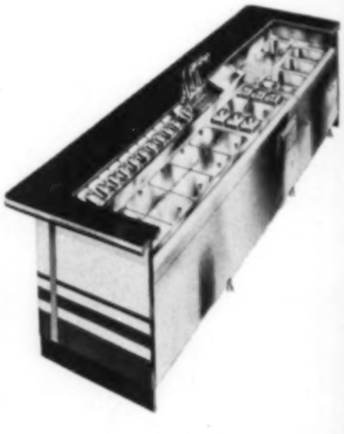
ELECTRICAL CONTACT SWITCH

The *Sedgwick "CBN" Contact Switch* is a new electrical contact switch for use in the operation of lights, buzzers, alarms, signals, indicators and other applications requiring a contact making and/or breaking device of unusually small dimensions.

Described as simple in design and rugged in construction, the device is made only as single pole, double throw, slow make and break for use on either a-c or d-c, at a maximum voltage of 250. The current rating is 2 amperes a-c, 1 ampere d-c.

Contacts are silver to silver, mounted on phosphor bronze spring arms, prestressed to provide ample contact pressure for the rated duty, the manufacturer reports.

Switch enclosure is of pressed steel plated with rust-resisting cadmium, and both side plates are removable for access to the interior. Sedgwick Machine Works, 80 Eighth Ave., New York, N. Y.



For improved sanitation this soda fountain comes with a 5-in. floor clearance

SODA FOUNTAINS

One hundred per cent dry refrigeration, vacuum cold plates, and an instantaneous dry cooler that supplies large quantities of plain and carbonated water immediately are features of a new line of soda fountains.

Improved sanitation is achieved with the 5-in. floor clearance for easier cleaning, although the working height of the fountain has not been changed.

One-piece tops are of stainless steel and the covers, also stainless steel, are hermetically sealed. Construction is of all welded, heavy gauge stainless and rust-resisting steel. Stanley Knight Corp., 3434 N. Pulaski Rd., Chicago 41, Ill.

SPEED FINISH FOR CONCRETE

A special compound said to give greater smoothness while resisting the elements, spalls and abrasion has been

(*Continued on page 184*)

"Your insulation prevented the fire from spreading".

From a letter from Ralph M. Fishel & Co., Denver, Colo., insurance and private banking.

BECAUSE INFRA INSULATION

★ **Emits Only 3% of Heat Rays**

★ **Is Metal with a Melting Point of 1250° F**

(Furnace Heat is Only 750° F)

INFRA IS A REAL FIRE STOP

Infra's surface absorbs only 3% of heat rays—97% is rejected! Infra emits, on the opposite surface, only 3%. That is one reason why Infra is so efficient in preventing wasteful—or dangerous—heat flow. Summer or winter, Infra keeps heat in its proper place.

Infra Insulation uses 99.5% pure aluminum made in accordance with Infra's own, special emissivity specifications. The fiber partition, which creates multiple air spaces and reflective surfaces, is flame, mold, and vermin proof.

Thermal Factors Printed on Every Infra Carton

Infra's multiple separated aluminum sheets provide 4 reflective spaces and 4 reflective surfaces, each non-condensation-forming. Two sheets of aluminum and the accordion partition block convection currents. Infra's triangular reflective air spaces and small mass eliminate conduction as a problem.

INFRA C FACTORS AND ROCKWOOL EQUIVALENTS

C.052 Heat Flow Down, equals 6" Rockwool.
C.083 Heat Flow Up, equals 3.97" Rockwool.
C.10 Lateral Heat, equals 3-1/3" Rockwool.

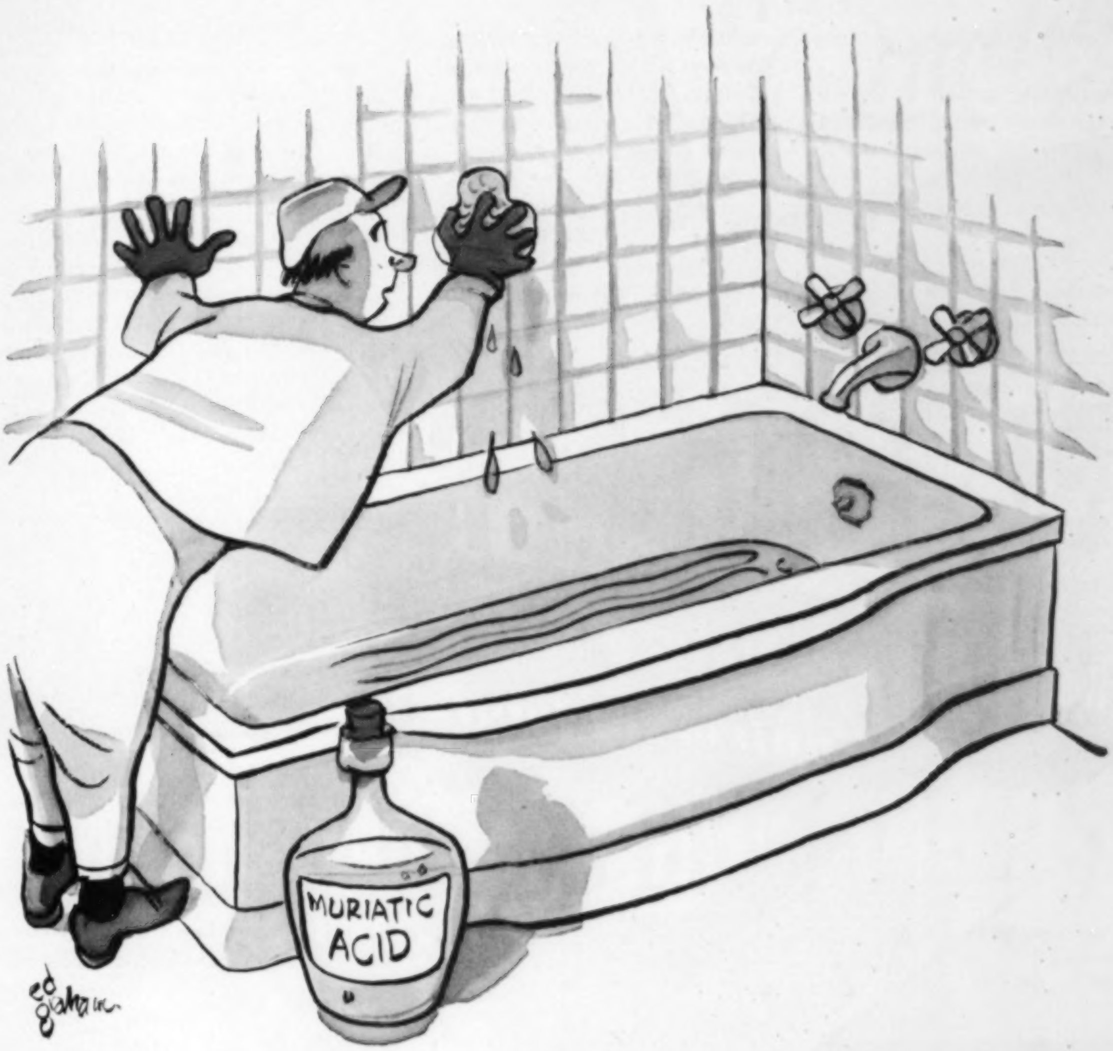
ACCORDION MULTIPLE ALUMINUM & TRIANGULAR REFLECTIVE AIR CELLS

Infra INSULATION, INC.
10 Murray St., N. Y., N. Y.

WRITE FOR INFRA'S FREE

32-Page Booklet: "Simplified Physics of Thermal Insulation" Handbook and text on heat transfer, condensation, vapor, mold, fire, radiant heating, etc. Contains master chart of k, C, R, U factors of all insulations, of all thicknesses, densities, weights.

ADDRESS DEPT. AR

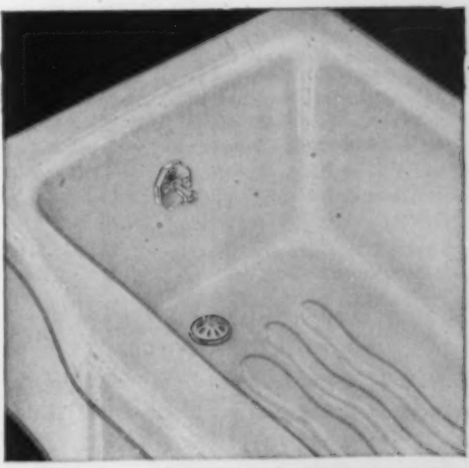


For the acid test . . . count on a BRIGGS bathtub—
it's stainproof!

COPYRIGHT 1949, BRIGGS MANUFACTURING CO.

Stainproof (acid-resistant) porcelain enamel is only *one* of the safety, comfort and luxury extras which have placed Briggs Beautyware 'way out in front of the field. Only Briggs makes the tub with the famous Safety-Bottom. Other features include the wide-rim seat . . . greater area of level bottom . . . integral tiling flange which provides leakproof edges, tub to walls. Only Briggs prices all this revolutionary designing right down to earth for *every* American home! Write *now* for new catalog featuring Briggs plumbing fixtures and Briggs brass. Briggs Manufacturing Company, 3031—d Miller Ave., Detroit 11, Michigan.

BRIGGS *Beautyware*



ALL Briggs bathtubs are furnished in stainproof (acid-resistant) porcelain enamel. Only *steel* fixtures give this extra protection and beauty at no extra cost! Note the patented Safety-Bottom, for safe tub and shower bathing.

(*Continued from page 182*)

developed as a "speed finish" for concrete walls.

The speed finish, applied with a cork float to either newly poured or old walls, is reported to meet objections to the impairment of the face of concrete walls which develops when a so-called rubbed finish is used.

A smooth, waterproof surface is given with the exterior type, which consists of a bonding coat and a finishing coat and which may also be used for interiors to meet special conditions.

Only one application is required for the regular interior finish, which is said to be smooth enough for paint to be applied directly over it without plastering.

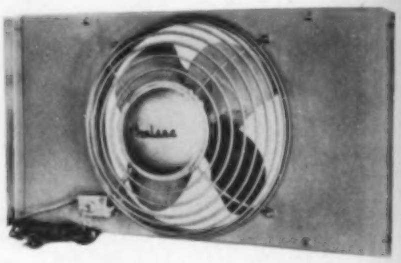
Sand and water are mixed with the exterior bonding and finish coats before application; the interior finish is a special powder that is mixed only with water. Irvington Form & Tank Corp., 42 Main, Irvington 24, N. Y.

PANEL-TYPE WINDOW FAN

For ventilating smaller areas, a 12-in., adjustable, panel-type window fan, *Chelsea Type WPJ*, fits into the upper panel of a standard window, permitting the raising and lowering of the upper sash.

The fan, which is adjustable from 25 to 36 in., is furnished complete with pull-chain switch and plug-in extension cord.

The fan has an air delivery of 1000 cfm, and is driven by a 1/25 hp motor operating at 1550 rpm. Chelsea Fan & Blower Co. Inc., 1206 Grove St., Irvington 11, N. J.



Fan for ventilating small areas fits in the upper panel of standard windows

STOREFRONT METALS

A new line of *Pitto Premier* storefront metals includes a wide range of profiles and aids design facility by presenting a group of mouldings which are interchangeable vertically and horizontally.

Highly polished and then Aluminited, the line offers mouldings pierced with slots for fastening.

A complete set of basic mouldings is furnished in a "kit" providing a variety of patterns from which the design most appropriate for a particular store may be chosen. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

ALUMINUM FASTENERS

Exact duplicates in aluminum of nearly every kind of wood and metal screw, machine bolt, washer, nut and nail are now available.

Advantages of aluminum fasteners listed by distributors include their resistance to rust when used with wood or aluminum construction, on either inside or outside construction. It is also pointed out that they run about three times as many to the pound as steel or brass.

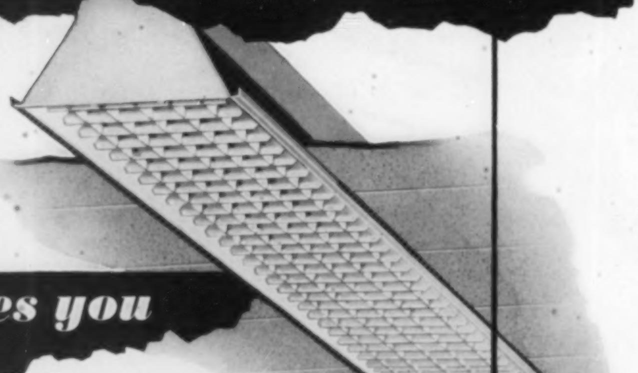
Currently on the market are 551 types and sizes. Central Steel and Wire Co., P. O. Box 5310-A, Chicago 80, Ill.

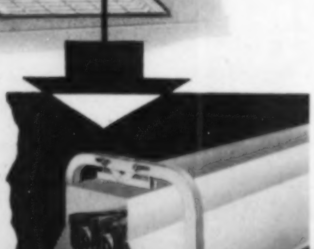
(*Continued on page 186*)

LPI TROFFER

the recessed fixture with "*universal joints*"

gives you





FLEXIBILITY—Troffer's "universal joint," the Flex-A-Hanger, insures proper alignment for in-line installations and compels each Troffer unit to hug the ceiling.

VERSATILITY—Troffer luminaires can be used as individual fixtures or in continuous rows. Troffers available for 1, 2, 3, or 4 30-watt or 40-watt lamps, also for 72" and 96" Slimline lamps in 120, 200, 300 and 425 ma. Incandescent Spot-O-Lights available for "punch" lighting for merchandise and display areas.

EFFICIENCY— 85% reflection factor with exclusive LPI Klasium-White enamel gives the Troffer maximum lighting efficiency.

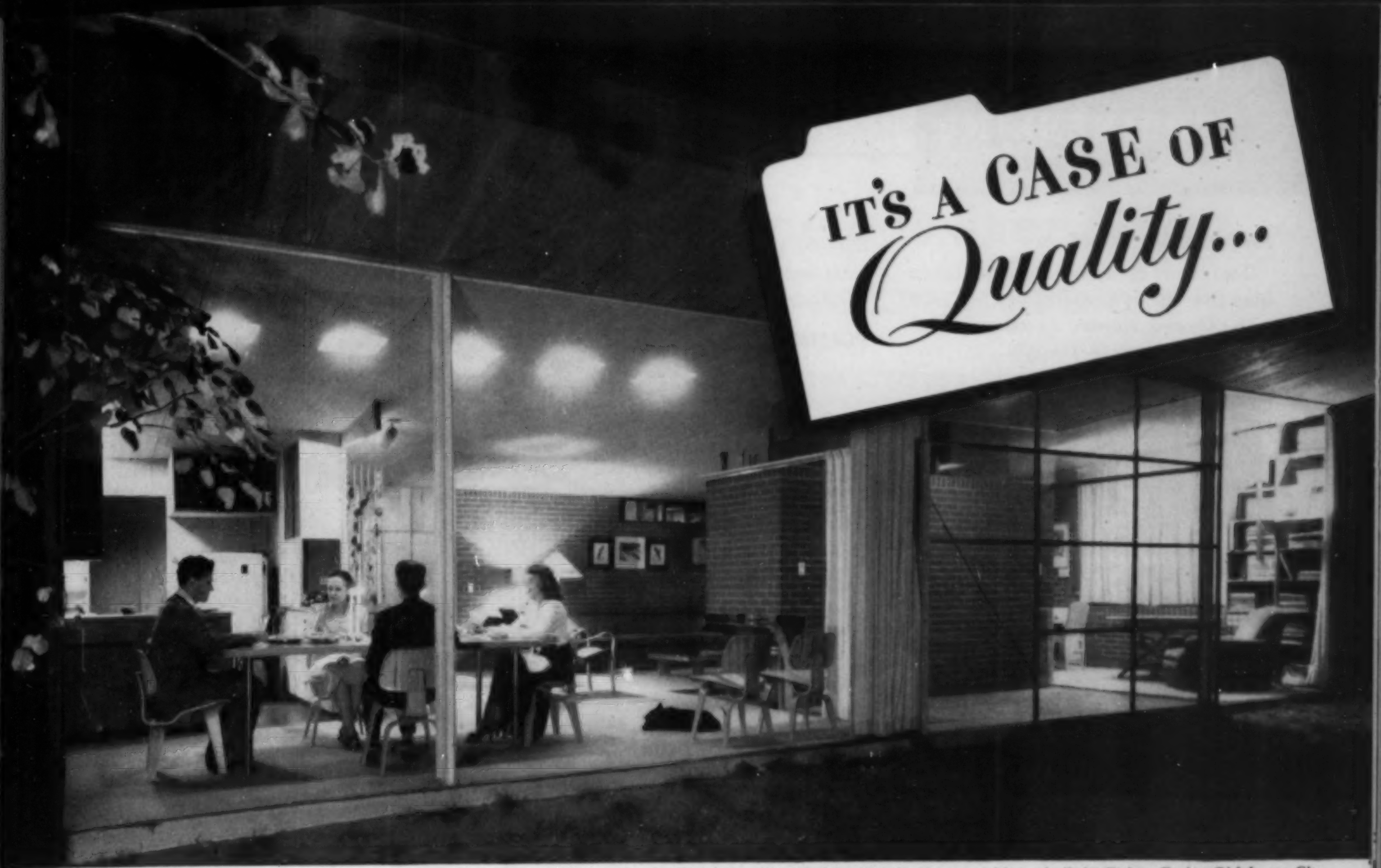
DURABILITY—Die-formed parts and heavy gauge metal throughout.

Three Troffer styles to pick from, all adaptable to different types of ceiling construction—

OPEN BOTTOM, for maximum light without decor
LOUVERED BOTTOM, with ideal 35° light cut-off
ALBA-LITE GLASS BOTTOM, completely enclosed in frame with continuous piano-hinged door

For detailed information send for Bulletin No. 415, or see your local LPI representative.

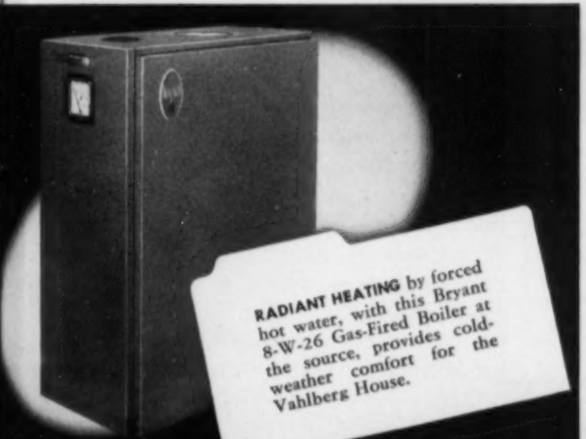
Lighting PRODUCTS, INC.
HIGHLAND PARK, ILLINOIS



IT'S A CASE OF *Quality...*

The Robert W. Vahlbergs' house, Oklahoma City; designed by the owner-architect; built by Robert Parks, Oklahoma City.

...in an architect's DREAM HOUSE



RADIANT HEATING by forced hot water, with this Bryant 8-W-26 Gas-Fired Boiler at the source, provides cold-weather comfort for the Vahlberg House.

stallation by White & Messer Plumbing & Heating Co., Oklahoma City)

The dream house of the Bob Vahlbergs sprawls comfortably on a wooded slope. It is rooted to earth by a seventy-five-foot-long slab of concrete. From its wall of glass, framing a view to the South, *to the Bryant Boiler that activates its unseen radiant coils,* it is as modern as tomorrow.

Architect Vahlberg has definite ideas about the things a house should have. He believes firmly in open planning to create a feeling of space; materials that are natural-looking and complementary to the setting of the house; wide expanses of glass, to capture the outdoors for indoor enjoyment; *automatic heating that provides the warmth of Spring sunshine,* no matter what the weather outside.

In the year or so of its existence, the house has *proved* these things, and more, to the Vahlbergs. It gives them everything they want for their living enjoyment . . . their *comfort.* That, in a word, is the proof. For, by and large, the components of anybody's dream house add up to just one thing: comfort.

We like to think of architects like Bob Vahlberg as men who deal in comfort, because that's a big part of *our* business, too. It's a kind of partnership . . . with *creative* architecture and Bryant *quality* heating going hand-in-hand to provide the stuff that dream houses are made of.

And we're mighty pleased that so many of these dealers in the much-sought commodity called comfort consider Bryant Automatic Heating part of their stock in trade.

Let the pup be furnace man
. . . and water boy, too!

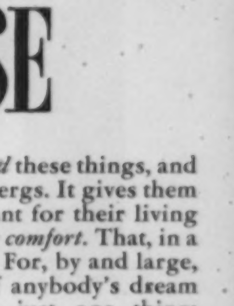
bryant

AUTOMATIC HEATING

BRYANT HEATER DIVISION
AFFILIATED GAS EQUIPMENT, INC.
Cleveland, Ohio • Tyler, Texas

"I'll let the Pup be Furnace Man"

says ROBERT PARKS, builder of the Vahlberg House, Oklahoma City



"Bob Vahlberg's house taught me a lot; not only about modern house construction, but about heating as well. I'm sold, and my family is sold. We're going to have a house like it . . . and *ours* will have a Bryant, too."

(Continued from page 184)

TWO-COLOR PAINT

Two colors in one coat of paint taken from the same can are reported achieved with *Almalex Bicolor*, an oil paint recently introduced in Toronto.

An exclusive formula is said to produce a two-tone dappled effect on any kind of surface with no preliminary flat coat.

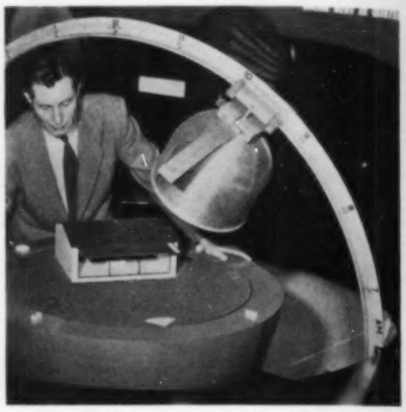
Bicolor is compounded from an oil base and is reported to be an extremely durable paint. It comes in 10 color combinations. Alma Paint & Varnish Co. Ltd., London, Ont.

PLASTIC SLIDE RULE

Durable laminated plastic is used for a newly designed circular slide rule small enough to be carried easily in the pocket.

Described as giving only slightly less accuracy than far more expensive slide rules, the new rule will perform these computations: multiplication, division, finding squares or square roots, cubes or cube roots, reciprocals and proportions.

A decimal equivalent table for converting fractions to decimals is on the reverse side. Allegheny Plastics Co., 351 Chestnut Rd., Sewickley, Pa.



Mechanical sun aids solar house design

SOLAR HOUSE ORIENTATION

Developed to help architects and home builders figure width of roof overhang for solar houses is a new gadget called the *Solarometer*, which is said to depict the angle at which the sun will shine in any part of the world at any time of day.

The instrument, which is described as being extremely simple to operate, can be set for any city in the world to fit a particular problem. Then the device sends a mechanical "sun" in an arc from dawn to dusk in the proper path for that latitude. The "sun" can be halted at any hour of the day. By adjusting the "sun" on a graduated scale, the operator can observe how its rays strike the glass area of a model solar house in summer and winter.

Correct width of overhang to provide maximum shade in summer and admit maximum sun in winter is determined by adjusting a scaled and movable roof overhang on the model house.

The Solarometer is reported to offer a clearer illustration of the principle of solar window areas to prospective builders in a fraction of the time needed to prepare drawings for explanation. Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

FLOOR LEVEL HEATING

Floor level heat by forced warm air for ranch type and basementless homes

(Continued on page 188)

The Barcol OVERdoor

A good door for good homes...

WEATHERTIGHT. Special roller crank closing action moves the entire door smoothly and evenly against the stop strips in the last few inches of its downward travel, effectively sealing the opening.

EASY WORKING. Tailored twin-torsion counterbalancing springs accurately support the weight of the door, so minimum effort is required for raising or lowering. Sticking is eliminated by the fast-freeing effect of the exclusive roller crank closing action.

Barcol OVERdoors assure satisfaction . . . giving long, trouble-free service because they are strongly built, accurately assembled, and carefully installed by factory-trained men.

ADAPTABLE. The picture above shows a somewhat unusual installation, in that this garage has both a single width and a double width entrance. It is, however, an excellent illustration of the adaptability of Barcol OVERdoors. Suitable doors can be furnished for any design of building and for any size of opening.

ELECTRIC DOOR OPERATORS. Available for swinging, sliding, and overhead type doors, and for sliding gates. They offer the convenience and protection of switch control or the amazing Radio Control.

SEE OUR CATALOG IN SWEET'S

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES in PRINCIPAL CITIES

BARCOL
BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILLINOIS

No one has ever been able to improve on

The WHITE of MEDUSA WHITE

T. M. Reg. in U. S. Pat. Off.

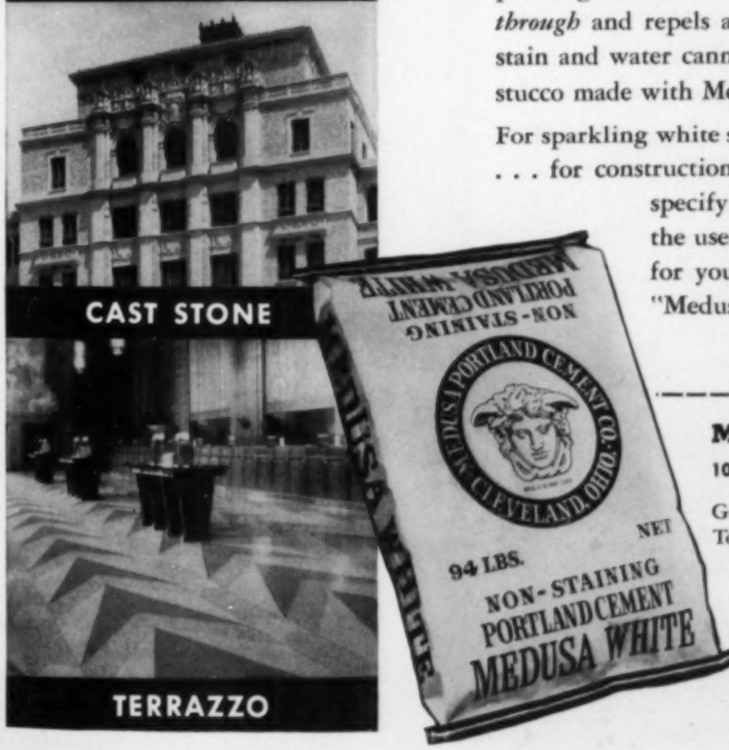
● Over forty-two years ago, a Medusa scientist created the first white Portland cement. Since then, many have tried but *no one has been able to improve on the whiteness, or the quality of Medusa White.* Medusa White has proved itself thousands and thousands of times in buildings all over the world . . . under all climatic conditions and in all types of construction. In every case, Medusa White because of its true white color has given complete satisfaction whether used white or tinted. *There is no whiter White, no finer white than Medusa White!*

For lasting beauty and weather protection, Medusa Waterproofed White is recommended. This is regular Medusa White Portland Cement with waterproofing ground in at the mill. This waterproofing material is in concrete, mortar or stucco *all the way through* and repels all moisture at the surface. Thus dirt cannot stain and water cannot enter, freeze, and disintegrate concrete or stucco made with Medusa Waterproofed White Portland Cement.

For sparkling white stucco, cast stone, Terrazzo and white concrete . . . for construction that will retain its beauty indefinitely . . . specify Medusa White. And for the full story about the uses of this remarkable cement, send the coupon for your copies of "A Guide to Finer Stucco" and "Medusa White Portland Cement."

"FIFTY-SEVEN YEARS OF CONCRETE PROGRESS"

STUCCO



CAST STONE

TERRAZZO

MEDUSA PORTLAND CEMENT CO.
1015-4 MIDLAND BUILDING • CLEVELAND 15, OHIO

Gentlemen: Please send me a copy of the booklets, "A Guide To Finer Stucco" and "Medusa White Portland Cement."

Name ....

Address ....

City .... *State* ....

Also made by Medusa Products Company of Canada, Ltd., Paris, Ontario

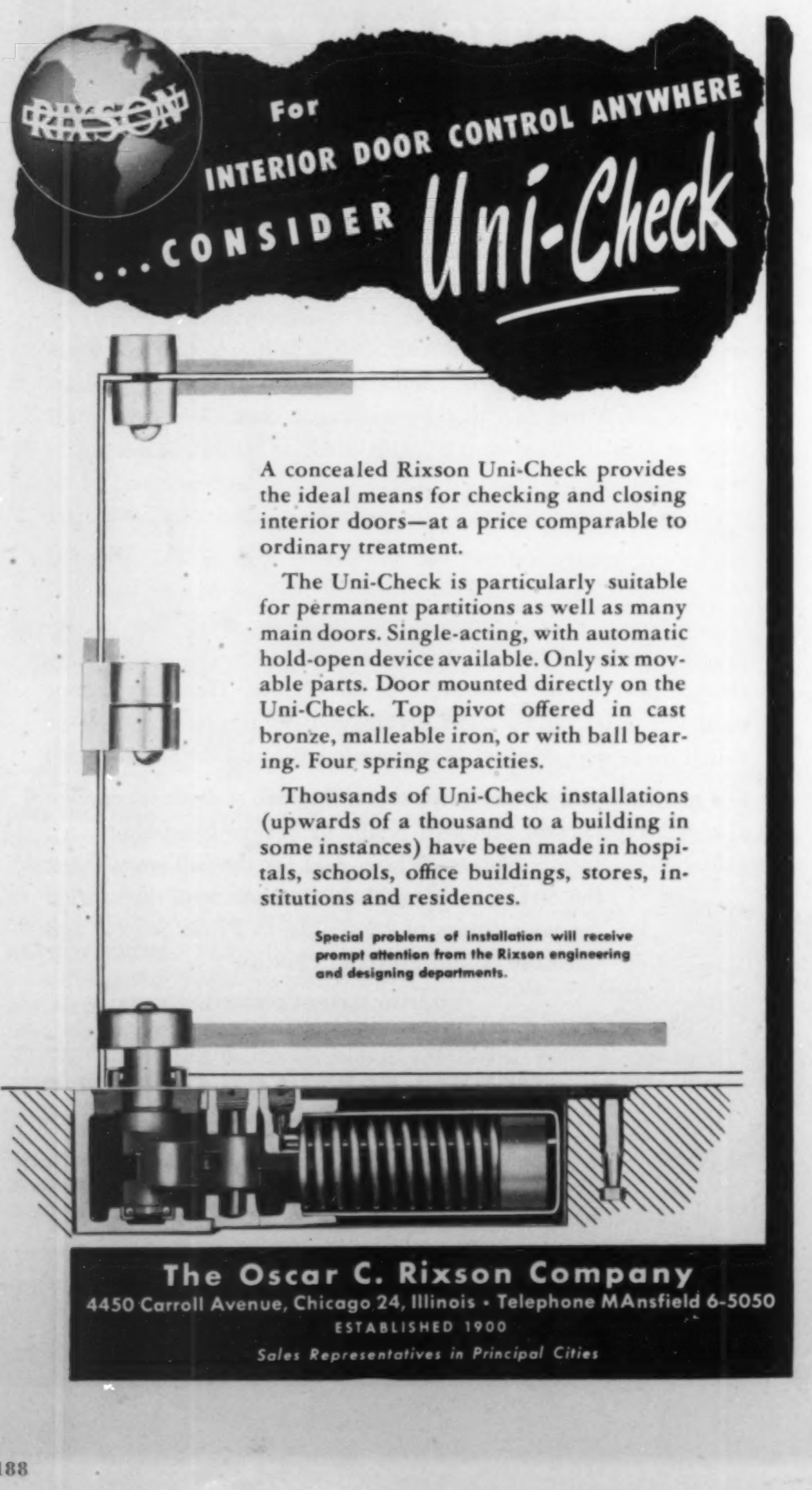
(*Continued from page 186*)

is available through application of the new *R9 International* Oil Furnace.

Ducts (6- or 8-in. galvanized pipe in the case of concrete floor) are run underneath the floor from the furnace to warm air outlets near outside walls in baseboard or floor.

Automatic Limit Control governs temperatures of warm air in the furnace, which is directed through outlets at the base of the unit into the ducts.

"Perimeter heating" thus is said to provide uniform heat throughout the home by compensating for heat loss at outside walls. The R9 International, which is fully automatic, requires less than 5 sq. ft. of floor space. It is 22¼ in. wide by 27¾ in. deep and 82½ in. high, requiring 6 in. clearance at front, none at sides and back. International Oil Burner Co., 3800 Park Ave., St. Louis 10, Mo.



RIXSON

For INTERIOR DOOR CONTROL ANYWHERE ...CONSIDER Uni-Check

A concealed Rixson Uni-Check provides the ideal means for checking and closing interior doors—at a price comparable to ordinary treatment.

The Uni-Check is particularly suitable for permanent partitions as well as many main doors. Single-acting, with automatic hold-open device available. Only six movable parts. Door mounted directly on the Uni-Check. Top pivot offered in cast bronze, malleable iron, or with ball bearing. Four spring capacities.

Thousands of Uni-Check installations (upwards of a thousand to a building in some instances) have been made in hospitals, schools, office buildings, stores, institutions and residences.

Special problems of installation will receive prompt attention from the Rixson engineering and designing departments.

The Oscar C. Rixson Company
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ESTABLISHED 1900
Sales Representatives in Principal Cities

EVAPORATIVE CONDENSERS

Improvements in a line of evaporative condensers now on the market are designed to give the units greater durability and make servicing easier.

Features of the new line include *Penta-Post Frame* members designed to make possible multiple service and access panels in the welded frame assembly; hot-dipped galvanized steel coil assemblies for use with ammonia; hot-dipped galvanized sump pan, blower and coil frame sections, wheels and scrolls; copper spray headers; and heavy steel coil side frames, galvanized after fabrication.

All prime surface coils, with copper tubes hydraulically expanded at 3000 psi into copper tube sheets with ferrule collars, are reported to prevent vibration failures at tube and tube sheet junction, and to safeguard compressor against scoring, since the brazing scale is loosened by hydraulic stretching and blown out of coil.

The condensers are available in a size range from 3 to 50 tons (duplexed to 100 tons). The Kennard Corp., 1819 S. Hanley Rd., St. Louis 17, Mo.

PORTABLE FOOD WARMERS

Scotty Electro-Matic portable food warmers in nine different models are designed to provide a complete counter kitchen offering the correct temperature for each food.

These portable food warmers for restaurants, cafeterias, hospitals, hotels, and other institutions feature selective thermostatic temperature control. They have electric Calrod heating units and their pan top combinations are interchangeable.

The top and body of each unit is die-stamped stainless steel, with smooth polished stainless steel finish. Pans and covers, die-stamped of one-piece solid 18 or 20 gauge stainless steel, fit standard 12 by 20 in. top openings. Seco Co. Inc., 5206 South 38th St., St. Louis 16, Mo.

BI-PASSING METAL DOORS

Orange Metal Bi-Passing Doors for closets are reported to save time, money and space because they eliminate the space needed for door swing and are precision built and fitted at the factory.

The doors, which require no studs, plaster or hardware, slide back and forth on ball-bearing rollers. The sliding panels, which have two felt sound-deadening pads at top, are cushioned at door jambs by rubber bumpers.

(*Continued on page 196*)

Pittsburgh Steeltex Floor Lath

gives you both

Form and Reinforcement

The placing of floors moves swiftly, smoothly and at a big saving in time and material with Pittsburgh Steeltex Floor Lath. This combination of form and reinforcement for concrete and gypsum floors and roofs eliminates the need for slow, costly form-work.

Pittsburgh Steeltex Floor Lath is a combination of a uniformly spaced welded wire mesh laced to a waterproof cord-reinforced backing. The lacing wires are crimped to permit separation of the backing which gives you automatic imbedment from the weight of the mix. The waterproof backing holds the water in the mix so that it must evaporate slowly which gives maximum strength and assures proper curing of the slab. This also minimizes drip, prevents loss of cement and eliminates cleanup expense.

For better floors and roofs use Pittsburgh Steeltex Floor Lath—it will save you time and money. See our catalog in Sweet's or write for your copy of D.S. 133 to Pittsburgh Steel Products Company, Department AR, Pittsburgh 30, Pennsylvania.

PITTSBURGH STEEL PRODUCTS COMPANY

A Subsidiary of Pittsburgh Steel Company

Pittsburgh 30, Pa.

(*Continued from page 146*)

construction or fabrication; they indicate new possibilities with materials and equipment. We see ahead greater savings in materials and greater savings in manpower for both small and big builders when modular plans become the rule rather than the exception."

Pre-cutting

Lack of agreement on the economies of pre-cutting made it clear that this topic has endless ramifications; also that it is not easy to realize its savings. Some said only the big-scale builder can use it effectively. Others said you can save money by pre-cutting if you are only building a single house.

David A. Bohannon, San Francisco operator, said: "Pre-cutting of parts is desirable only when the building is operating on a scale that justifies the investment of thousands of dollars. . . . Unless each item is exactly detailed, pre-cutting had best be confined to studs, rafters, joists, blocking and bridging. Where an ordinary set of house plans consists of three or four sheets, a pre-cutting plan set comprises from 50 to 100 sheets.

"Where pre-cutting can be employed efficiently it brings major economies. Workmen become highly skilled and produce more work per day.

"Conventional on-site construction can be streamlined in some cases. After determining those items to be pre-cut, all other items should be cut and assembled at the job site. On a large project materials can be ordered from the mill, sized to specifications, 'banded' and delivered by truck to the job site. This saves at least three handling steps.

"Another economizer is a small mobile cutting line that can be moved along with the progress of the project. This eliminates yard storage, loading and hauling of members which can be turned out at the site. Similarly, field painting of trim delivered by the mill as per schedule places these items in the building for finish carpenters to use in one handling operation."

Other speakers stressed the fact that pre-cutting tends to get complicated, and that it is easy for a builder to go overboard buying power tools and trying to set up Rube Goldberg assembly lines, with sheets and sheets of instructions and "exploded" drawings. Clarke Daniel kept pounding on the fact that you can do much with just a portable electric saw and a few simple jigs. His favorite example was a little test he had run. He asked carpenters to experiment with a good old-fashioned hatchet for notching rafter ends. They could do it three times as fast as with a power saw.

So pre-cutting is no panacea. It is a prescription to be taken in measured doses, with a good mixture of common sense and a shot of imagination.

Prefabrication

There was a great deal of speechmaking on this topic, but the net was small. Some of the big-name prefabricators had their chance at the microphone, and parried some prepared questions designed to make the discussions fairly lively, but nobody took it very seriously. Certainly the prefabricated house did not show any newly significant successes.

Construction Details

The cost-cutting clinics at the convention became most lively when panel

(*Continued on page 192*)

3 GYMS IN ONE

From Coast to Coast the HORN FOLDING BLEACHERS AND HORN FOLDING PARTITIONS are making one Gym do the job of three. With emphasis on careful planning Horn offers a "tested" solution to gym problems.

HORN FOLDING BLEACHERS-HORN FOLDING PARTITIONS

HORN, with years of experience and skill, offers to every school planner the services of the Horn Engineering Department. Horn installations are guaranteed.

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Write for the HORN BOOK. *Modern* SCHOOL PLANNING
A complete book with photographs, plans and specifications.

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FORT DODGE, IOWA — Horn — ESTABLISHED 1909

Good Door Control Conforms to Your Design

LCN Floor Type Closers are Used Where Transom Bars are Thin

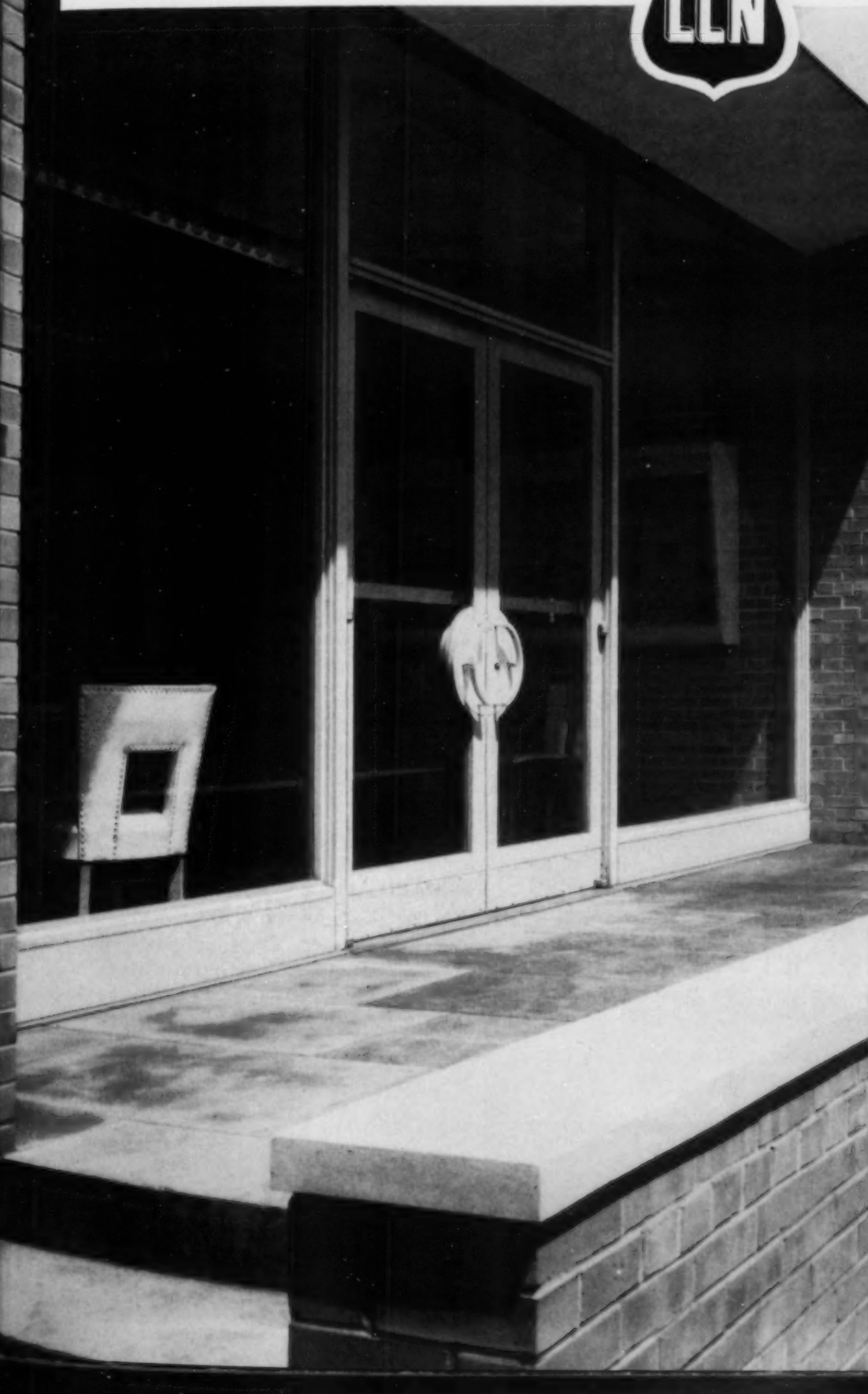
• Pictured, one entrance to the new Chicago offices and warehouse plant of John A. Roebling's Sons Co., designed by architects Skidmore, Owings & Merrill of Chicago.

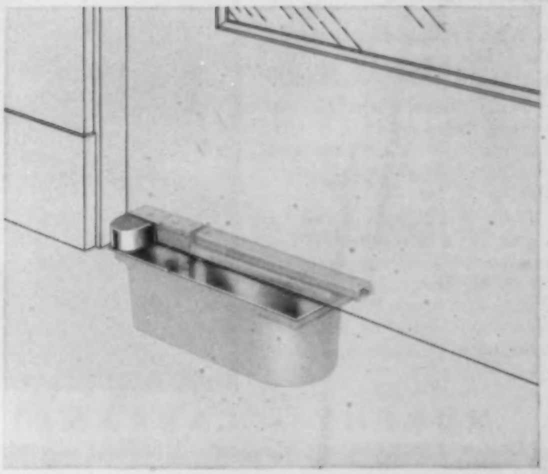
Here, as in many modern entrances, large expanses of glass are used, with narrow transom bars. The doors are hung on LCN bronze offset pivots and effectively controlled by LCN No. 16 Floor Type Concealed Door Closers.

These closers are of superior design. Power is applied to the door through a lever arm (always the most effective way) operating on a slide block concealed in the bottom of the door. The door's weight rests not on the mechanism but, independent of it, on the rigid closer box. Servicing the closer need never take the door out of use for more than a few minutes.

LCN's eleven types of concealed closers and full line of exposed types fill every need for door control that is effective, economical and suited to all common kinds of swing doors. Listed in Sweet's 1949. Latest catalog 11-a, almost a manual on the subject, promptly sent on request. LCN Closers, Inc., 466 W. Superior St., Chicago 10, Ill.

OVERHEAD AND FLOOR CONCEALED LCN **AND EXPOSED TYPE DOOR CLOSERS**





• LCN No. 16 Floor Closer is recommended for heavy wood or metal doors hung on offset pivots, where transom bars do not permit use of an overhead concealed closer. Block and slide concealed; lever arm visible only when door is opened. Closer mechanism easily accessible; does not carry weight of door. Top and bottom pivots included.

(Continued from page 190)

experts and builders got to trading experiences on construction details. Much of the subject matter does not wrap up neatly in a report such as this, for answers were frequently incomplete, cost comparisons were hurried and inconclusive, and experiences were frequently not based on tests which would be acceptable to, say, the FHA, whose representative was present and was kept pretty busy fending off some rather pointed questions about FHA standards and "dictates." With that warning, this report will attempt to sift out the grist of the cost cutting clinics.

Roof Trusses. J. T. Lendrum, U. of I. Small Homes Council, had many a chance to touch on what was obviously his favorite topic — roof trusses for small houses. (ARCHITECTURAL RECORD, May, 1948.) Briefly, roof trusses, easily made in simple jigs, save in both material and labor. But as Lendrum pointed out, the biggest savings are not directly in roof construction, but in smooth building operations under the roof. Trusses permit quick enclosure of the building, keep it free of bearing partitions. The house becomes a comfortable open workshop where all trades can work to best advantage, materials can be stacked, operations can be done with speed and efficiency, wall boards can be handled in large sizes, partitions can be made on the floor and tilted into position.

"Thick-Edge Slabs." Another topic much discussed was a floor slab with a thick edge, floating on the ground without foundations. Nobody could describe it exactly, and obviously the term "thick-edge slab" was understood differently in many instances. However, there was much interest in it. The discussion, it was pointed out, was academic in at least one important respect — the FHA won't now pass it.

One builder pinned it down somewhat by telling how he pours his. The site is leveled and vegetation removed with a bulldozer. Then a layer of Sisalkraft is put down, then a layer of vermiculite concrete, on top of which is poured a 2-in. topping of reinforced concrete.

One concern was the action of frost, the worry being that if the house remained unheated through cold weather the frost would heave it. Carl Boester, Purdue, gave it as his opinion that if the slab were properly engineered, no harm would be done, pointing to the parallel with concrete highway construction.

Insulation of the slab got some attention. Laurence Shuman, HHFA, pointed out that it should be insulated at the edge (see ARCHITECTURAL RECORD, Jan., 1948). Boester pointed out that heat losses through the floor were not sufficient to make it economical to insulate the slab. And Lendrum was quick to protest that it was not heat loss, but comfort, that was involved. A slab well insulated at the edge would be 20° warmer than an uninsulated one.

From this point the discussion veered off to other types of floor and foundation construction. One builder reported a system of piers with concrete perimeter beams, observing that it was quite inexpensive, but that there was a problem of working out forming for easy pouring.

Flat vs. Pitched Roofs. One iconoclastic touch came in the general agreement that the economies of flat or shed roofs

(Continued on page 194)

Kitchen convenience and roomy living in compact apartments

With folding doors closed, the Murphy - Cabranette Kitchen is entirely concealed.

With doors opened as shown, the kitchen is ready for convenient cooking but concealed from view from the living room,

This installation is one of eight in a Houston, Texas apartment building. Planned by S. H. Dixon of Houston. Built and operated by the Braeswood Building and Development Company.

MURPHY - CABRANETTE KITCHENS

Gas or electric range of approved design. Electric refrigerator with push-button door and stainless steel frozen food compartment. One-piece sink and range top. Storage cases. All streamlined into one compact unit.

Vitreous porcelain on exposed surfaces; never requires repainting; washes clean with soap and water. Trouble-free operation and negligible maintenance proven in more than 25 years of service in rental properties. Write for new bulletins.

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Dept. R4 — MICHIGAN CITY, INDIANA

Classroom Weather Magic

Imagine a unit that brings healthful outdoor air right through the classroom walls. A ventilator that takes that air, cleanses it, warms it, floods the room with it.

You're imagining a Trane Unit Ventilator!

The unit adds beauty to classrooms, as well as health and efficiency. Never a noise to disturb concentration. No drafts to bring on colds. Just clean, healthful air, to increase alertness, to help every child make the most of his studies, to help him further enjoy the room where he spends so much of his time.

Trane engineering skill has developed smoothly-running fans that eliminate distracting noises. Kinetic Orifice coils guard the unit against freezing. Positive block-offs banish drafts. Generous filters trap dust.

Service and maintenance are easy, too. One-man panels make it easy to "get into". The standard motors can be serviced by anyone. Anodized aluminum wall boxes end streaking of outside walls. And, like every product with the magic "T-R-A-N-E" on the nameplate, it gives economical, and completely satisfactory service for a long, long time.

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Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment — Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties . . . IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

For kindergarten kids whose part-time playground is the classroom floor . . . for lordly seniors in high schools and colleges . . . Trane Unit Ventilators are doing a real job in schools all over the country.

BEAUTY AND ECONOMY

Go hand in hand

WHEN YOU SPECIFY

CABOT'S STAINS

- **CABOT'S CREOSOTE STAINS** provide a lasting finish for outside woodwork — yet cost less than 1/3 as much as good paint!
- **CABOT'S CREOSOTE STAINS** penetrate deeply — bring out all the natural beauty of the wood — protect for years against decay and termites.
- **CABOT'S CREOSOTE STAINS** are available in a wide range of attractive colors — from clear, brilliant hues to weathering grays and browns. And these colors stay fresh and bright for years.

Write Today for new Creosote Stain color card and complete information.

Samuel Cabot, Inc.

4221 Oliver Building, Boston 9, Massachusetts
New York *Minneapolis* *Chicago*

(*Continued from page 192*)

were largely illusory. While it is easy to assume that a flat roof saves money, Boester reported that tests showed this just plain ain't so. By the time you get the right timber, put in some insulation, arrange ventilation for the insulation, you have contrived to make the roof construction fairly complicated, as compared to the old-fashioned pitched roof, and you soon find it cheaper to forget the whole thing, if it is economy you are seeking.

Septic Tanks. Shuman gave a brief and preliminary report on studies by the HHFA and the U. S. Public Health Service on septic tanks. While he was not able to give many of the findings, which are still under discussion between the two bureaus, he did say that many of the old standards were not justified, and that many new ideas are being debated.

For example, there is no apparent reason why the septic tank could not be built into the basement, or at least alongside it. This might result in some savings; certainly it would save digging up sizable patches of lawn trying to find the darned thing.

He said also that new manufacturers probably would enter the field, once new standards have been set and approved. This might get to be important as home building continues, inasmuch as some 60 per cent of houses now being built are not connected to sewers.

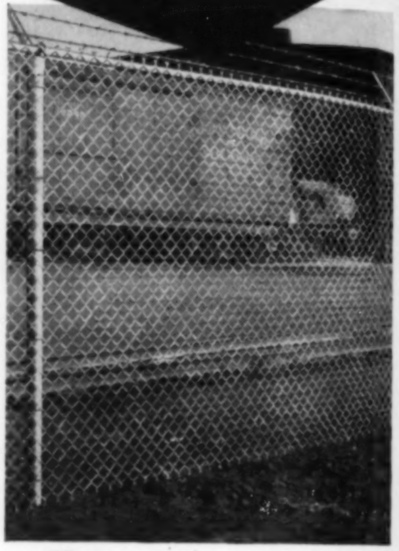
This reminded Boester to remark that the whole subject of sanitary systems might be affected by a new water closet design now being studied, a design done on the principle of the garbage grinder. The idea would be to permit waste lines of small size, along with considerably more freedom in plumbing layout.

In the same class of untested bright ideas he mentioned two others, neither of which he would recommend right now. One was roof trusses made of gypsum board — some were made at Purdue six years ago and are still in place. The other was the use of the aluminum foil on the back of gypsum board for electric panel heating.

In winding up his own remarks, Boester gave it as his opinion that for economy in small-house construction the primary need is not, as many seem to think, new techniques, but simply good planning of the houses and good planning of the job.

Here's why

IT PAYS TO FENCE BEFORE YOU BUILD



Specify ANCHOR and be SAFE!

A sturdy Anchor Chain Link Fence around your building site protects outdoor storage of materials and supplies. Controls employee and motor traffic entering and leaving the building site. Gives "sidewalk superintendents" a friendly view of construction without permitting thoughtless interference with work. Saves you the time and trouble of erecting and tearing down a temporary fence. And, when construction is finished, the Anchor Fence is ready to give your client years of unfailing protection with:

1. *Deep-Driven Anchors,* hold the fence erect and in line, in any soil or weather.
2. *Square Frame Gates,* amazingly free from warping and sagging.
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4. *Square Terminal Posts,* improve strength, durability and appearance.

WRITE TODAY for our free, illustrated booklet . . . showing many types and uses of Anchor Fence . . . containing structural diagrams and specifications. Write for your copy to: ANCHOR POST FENCE DIVISION, Anchor Post Products, Inc., 6600 Eastern Ave., Baltimore 24, Maryland.

Anchor Fence

Nation-wide Sales and Erecting Service

for every taste . . .
What home owner wouldn't exclaim over a beautiful bathroom like this? It's the Crane Drexel Group, styled to grace the finest homes.

For every taste... for every budget... **CRANE**

That's the beauty of a really *complete* line—it satisfies all individual likes. Crane can be gay, Crane can be sedate. Where "cost is nothing," Crane goes de luxe . . . where cost is everything, Crane gets right down to earth.

And whatever the preference in *styles,* there's no doubt of the preference in *names* . . . Crane is the best known name in plumbing.

The complete plumbing line includes bathroom fixtures, kitchen sinks, laundry tubs—all of them equipped with finger-tip *Dial-ese* controls. In heating, Crane supplies everything required for any home system . . . warm air, hot water, steam . . . coal, coke, oil, or gas.

For selections from the Crane line, see Crane Service for Architects—and be sure to check your requirements early with your Crane Branch or Crane Wholesaler.

for every budget . . .
It doesn't take a fat purse to enjoy America's favorite plumbing. Take this Crane Neu-Era Group, just right for modest budgets. It lacks nothing in dependable service, nor in the lasting gleam of the fixtures. Lavatory and bathtub alike are equipped with *Dial-ese* faucets, just as in the most commodious Crane bathrooms.

CRANE

CRANE CO., GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO 5, ILLINOIS

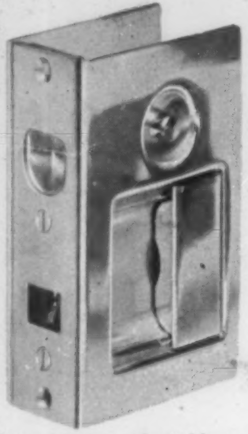
RESIDENTIAL PLUMBING

PLUMBING AND HEATING · VALVES · FITTINGS · PIPE

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

QUALITY LOCKS *from* ADAMS-RITE

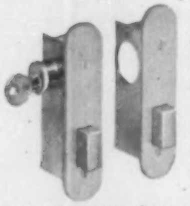
THE ORIGINAL RITE-LOCK® for SLIDING DOORS



Single assembly easily installed by simple cut-out, even in narrow stiles. No mortising. 3 types fit doors 1⅛"—1 15/16" thickness, with a ¾" wardrobe type. Latch and thumb button types with emergency unlocking feature adaptable to either hand. Pin tumbler cylinder in escutcheon is optional. Exterior parts solid brass. Escutcheons measure 4½" x 2⅞".

MINIMUM BACKSET DEADLOCKS FOR STANDARD CYLINDERS

Can Be Keyed to Any Job



For narrowest extruded aluminum, structural steel and wood stiles. Series 970 Deadlocks for standard cylinders have 13/16" backset, 1 7/16" depth. Fifteen other standard backsets to 1¾". Series 980 identical except for ¾" dia. pin tumbler cylinder and 15/16" backset. Rugged steel and brass construction, armored bolt with ⅝" throw, bronze or aluminum face and strike. Radius, flat and bevelled faces interchangeable.

TEMPERED GLASS DOOR DEADLOCK

Takes the place of 2 locks. Has single or double bolts and 1 or 2 cylinders. Handle operates bolts in sequence, cylinder locks handle. Designed for and can be installed in any tempered glass door top or bottom channel. 4 sizes: 1-15/16" High x 1-13/32" Wide.

CYLINDER SLIDING DOOR LOCK

Operates by cylinder from one or both sides. Fits all standard cylinders with adapter cams furnished, (specify when using Yale). Solid bronze face, strike & bolt. Heat treated aluminum alloy case. Use your own cylinders and trim. Also used as jimmy-proof lock.

Also—Adams-Rite Solid Brass Sliding Door Flush and Edge Pulls, Surface and Jam Bolts and Ball Latches

ADAMS-RITE®
MANUFACTURING COMPANY
540 W. Chevy Chase Dr., Glendale 4, Calif.

(Continued from page 188)

For a small additional cost the doors are coated with a sound-deadening substance in a new process called Fendixing. Of standard 6 ft. 8 in. height, the doors are available in 3-, 4-, 5-, and 6-ft. widths.

The fixed center panel of the 6-ft. door can be prepared for simple insertion of a full-length mirror at a small extra cost. Virginia Metal Products Corp., Orange, Va.

WINTER AIR CONDITIONER

An automatic oil-burning winter air conditioner of the "high-boy" type requires less than a square yard of floor space and, according to the manufacturer's tests, delivers 72,000 Btu at the bonnet and 61,200 at the register.

A vaporizing-type burner with a stainless steel combustion chamber is used. Automatic humidification, forced air circulation and filtering are also provided, and thermostatic control is standard. The cabinet is of two-tone blue baked enamel. Armstrong Furnace Co., Columbus, Ohio.

WROUGHT IRON DINETTE SETS

Two dinette sets in wrought iron with plastic-covered chair-seats have been added to the Salterini group. One is modern in design, the other more traditional, and both are available in black, white or sage green finishes.

Both sets are given the Neva-Rust treatment which is guaranteed to prevent rust for six years, and the manufacturer believes that the modern group is the first wrought iron dinette set at a popular price. John B. Salterini Co., Inc., 510 E. 72nd St., New York 21, N. Y.

STANDARDS

Commercial Standard for Enameled Cast-Iron Plumbing Fixtures (CS77–48). Establishes minimum standard specifications for enameled cast iron plumbing fixtures, definitions and inspection rules. Includes standard styles, types and sizes for staple enameled cast-iron plumbing fixtures; and methods of testing for both acid-resisting and regular types are described. Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Cabot's 32 attractive shades give you freedom in *Color Selection*

Architect: Eleanor Raymond

Cabot's Collopakes now offer you a choice of thirty-two attractive shades including many unique shades available from no other source.

Cabot's Paints have tremendous hiding power and lasting brilliance because they are made by our patented Collopaking process. Pure pigments are broken down into particles of submicroscopic size and colloidally combined with wear-resistant oils. No fillers or adulterants are used. As a result, Cabot's Paints produce a porcelain-smooth finish which shows no brush marks . . . hold their color, and resist the elements for years.

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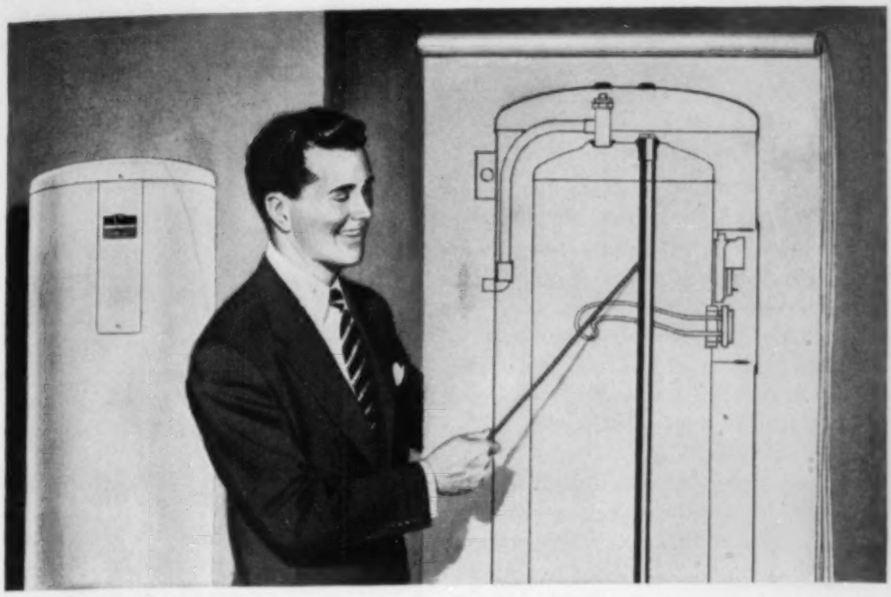
New York, Minneapolis, Chicago

Cabot's Collopakes



Why New Frigidaire Electric Water Heaters Last Years Longer

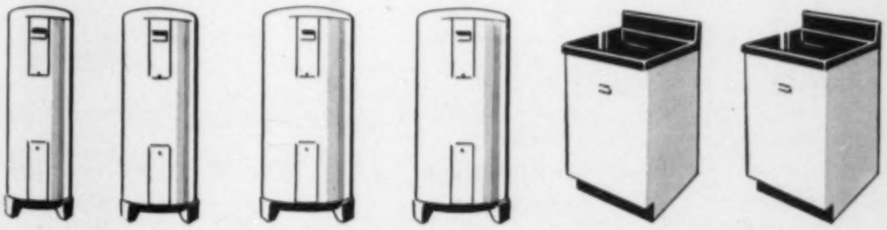
A Wonder-Working Magnesium Rod built into the tank literally adds years to the life of Frigidaire Electric Water Heaters. In both hard and soft water areas, this rod attracts corrosive elements to itself—effectively checks pitting, rust and "red water."

10-Year Protection Plan backs each Frigidaire Water Heater. Any parts proving defective during first year replaced without cost. If tank fails during first 5 years, new heater furnished (labor included first year only.) If tank fails during second 5 years, new heater furnished at special price.

Many Other Important Features — Frigidaire's exclusive Radiantube Heating Unit, for instance. It's sickle-shaped to shed scale and sheathed in copper—lasts far longer than ordinary units. And it can't waste current or heat because every square inch of heating surface is in direct contact with the water. Other features include: glass wool insulation, hot water trap, drain faucet, cold water baffle, and accurate thermostat.

Specify Frigidaire For Lasting Satisfaction. All over the country, more and more builders and architects are specifying Frigidaire Water Heaters and other Frigidaire equipment. They know Frigidaire makes any home more attractive to tenants and buyers.

Complete Range of Sizes—30 to 80 Gal. Upright or Table-Top Models



FRIGIDAIRE Makes a Good Building Better

Facts about these Frigidaire Products—yours for the asking

Check this list of Frigidaire products you want to know about—sign your name and address and mail to Frigidaire Division, Dayton (1), Ohio. (In Canada, Leaside 12, Ontario), or see your Frigidaire Dealer—find his name in Classified Telephone Directory.

Household Refrigerators
☐ 9 models from apartment house 6 cu. ft. to "Tandem" 14.5 cu. ft.

Electric Ranges
☐ 7 models from apartment house RK-3 to RK-70 which has two Twin-Unit Even-Heat ovens.

Electric Water Heaters
☐ 30 to 80 gals. Magnesium Rod checks corrosion and "red water."

Automatic Washer
☐ Live-Water action; all porcelain; one-piece, sealed, Unimatic mechanism; warranted.

Electric Ironer
☐ Full, 30-inch, open-end roll, Prestoe-Matic foot operation.

Automatic Electric Dryer
☐ Dries washer-load of clothes in 15 to 25 minutes automatically.

Home Freezers
☐ 8 cu. ft., with Meter-Miser mechanism. Others up to 26.5 cu. ft. size.

☐ **Electric Dehumidifier**
☐ **Air Conditioners**
☐ **Water Coolers**
☐ **Commercial Refrigeration**

Name..........................

Firm Name......................

Street & No.....................

City..............*State*.......

What boiler would you recommend for a $350,000 home?

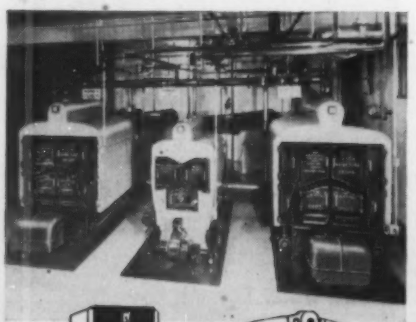
This functionally modern home was recently built in Bloomsburg, Pa., by Harry L. Magee president of The Magee Carpet Company; it is one of Pennsylvania's finest show places. Berninger, Haag, and D'Entremont, Architects; George A. Heath, Heating Engineer; Wm. L. Coombs, Heating Contractor; Percy Swank, Building Contractor.

The finest, of course. That's what the architect, engineer, and contractor did when they built this magnificent home. In fact, they chose *six* H. B. Smith boilers — two to heat the main house, by radiant heat and by air conditioning . . . one to supply domestic hot water . . . two to warm the swimming pool water and recirculate it . . . still another to supply domestic hot water and car-washing water to the garage.

No matter the size of the home your client wishes, you can recommend an H. B. Smith boiler that will give him "luxury" heating at bargain basement prices—for Smith-Mills boilers are designed and engineered to deliver maximum heat at lowest cost. True, they cost a little more to buy, but smaller fuel and maintenance bills more than make up the difference.

Which boiler will you specify on the next job where the best in heating is requested? You can't go wrong if you recommend H. B. Smith! THE H. B. SMITH CO., 62 Main St., Westfield, Massachusetts.

Largest boiler room in the Magee residence (there are several others!) includes two No. 340 oil-fired boilers and one No. 24 Hy-Test oil-fired hot water supply unit, all H. B. Smith products.



H. B. Smith

CAST-IRON BOILERS

Offices and Representatives in Principal Cities

(*Continued from page 148*)

Air Filtration

(1) The magic of Electronics in Air Filtration; (2) American Air Filters in Industry. The first bulletin takes up the theory and practice of electronics in air filtration. A section is devoted to the manufacturer's research and development in the field. The basic line of electronic air filters is described. The second bulletin discusses what makes up industrial dust problems and how they are solved. Separate sections deal with filtered air for: industrial air conditioning, industrial ventilation, drying operations, product finishing, control of bacteria and mold spores, cooling electrical equipment and engines and compressors. 18 and 23 pp., illus. American Air Filter Co., Inc., 1st and Central Ave., Louisville 8, Ky.

Folding Tables and Benches

Schieber Folding Tables and Benches (Catalog No. 81547). Pictures installations of in-the-wall and against-the-wall folding tables designed to provide lunchroom facilities in rooms primarily used for other activities in schools, churches, etc. Detail drawings and specifications are included. 8 pp., illus. Schieber Mfg. Co., 12720 Burt Rd., Detroit 23, Mich.

Circuit Breakers

Westinghouse Quicklag Loadcenter (B-3881). Describes circuit breakers of the thermal-magnetic type that provide time delay on overloads and instantaneous tripping on dangerous overloads and short circuits. Such features as flexibility, required inventory, performance and convenience of installation are discussed. 12 pp. Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.*

Fans

(1) Chelsea Residential Fans (Catalog No. 863); (2) Chelsea Industrial and Commercial Fans (Catalog No. 864). Description, specifications, dimensions, and photographs of a line of fans for residential, commercial and industrial uses. The catalogs contain information on 17 types of ventilating and cooling equipment varying in output from 1,000 to 32,000 cfm. 4 and 6 pp., illus. Chelsea Fan & Blower Co., Inc., 1206 Grove St., Irvington 11, N. J.

(*Continued on page 200*)

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You'll find that for replacement of obsolete equipment or for new installations, Todd Burners will effect savings in fuel and maintenance costs. Skilled Todd specialists, modern Todd facilities—backed by 35 years of engineering experience — guarantee you economical burning of liquid and gaseous fuels. See your local Todd dealer now!

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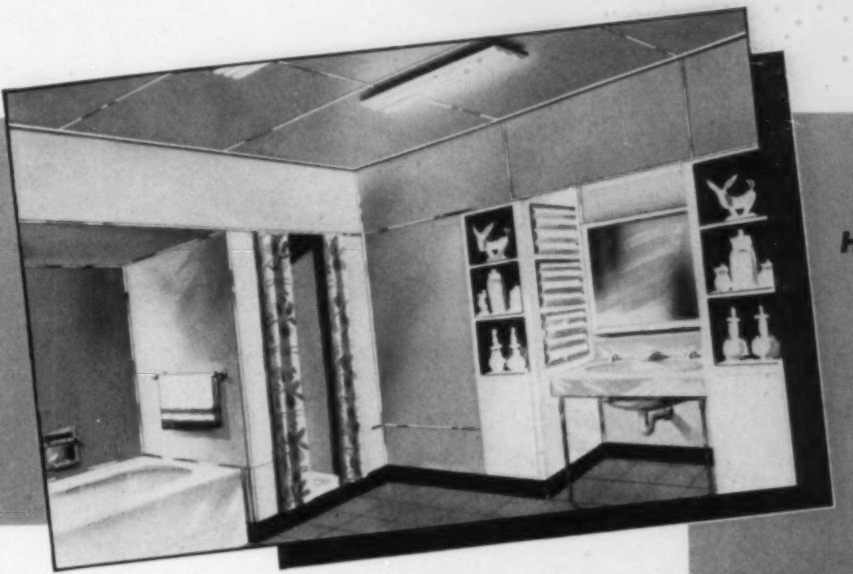
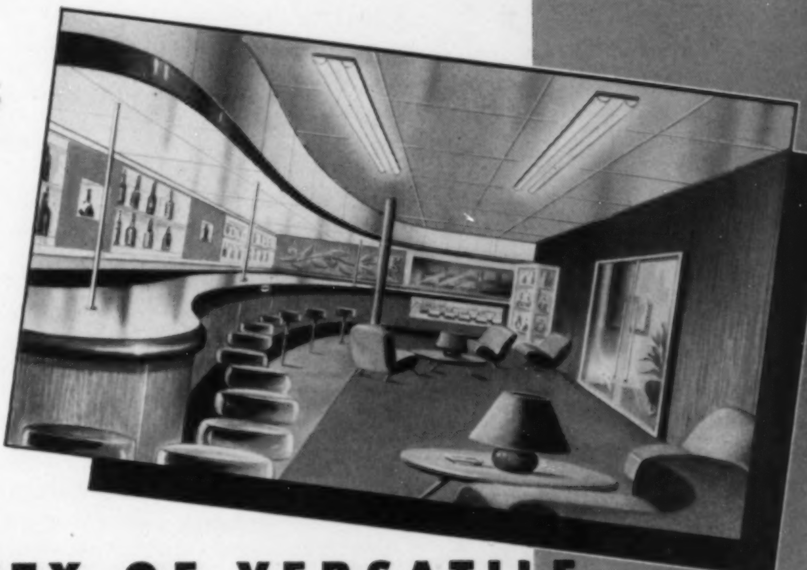
Specify Marlite walls



FOR HOMES

LET YOURSELF GO ON BEAUTY...



THERE'S PLENTY OF VERSATILE
Marlite NOW!

FOR COMMERCIAL INTERIORS

You can specify Marlite now – and what's more your clients can get it! For Marlite production is up – there's enough made now for everyone!

That's good news to architects. For Marlite is the versatile wall and ceiling panel. For modernization or new construction, it's equally appropriate. It comes in a variety of patterns and in many stunning colors. Marlite lends itself ideally to the creation of sparkling colorful interiors and is equally at home in surroundings of quiet, warm dignity.

And it's good news for clients, **too**. For Marlite's plastic finish seals the original color **in** – keeps grime and dirt **out**. It cleans easily with a damp cloth. And Marlite goes up fast – over old walls or new – with a minimum of muss and bother and with practically no waste.

Is it any wonder that the news of Marlite's availability is **good** news to everyone who must stretch dollars now as never before? Investigate Marlite and you'll specify Marlite. See the Marsh Catalogue in Sweet's Architectural File or write for the new 12-page, full color catalogue.

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405 MAIN STREET, DOVER, OHIO

FOR CREATING BEAUTIFUL INTERIORS